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Recovery of the Rockaways: An Analysis of the Role of Cultural Resources in Public Policy after Hurricane Sandy and its Effect on Community Resilience

Abstract

After Hurricane Sandy devastated New York City in 2012, the Rockaway Peninsula, a culturally and architecturally significant region in the borough of Queens faced extensive damage. Managed by both the National Park Service and the city of New York, a range of policies were implemented post-Sandy to aid in urban recovery. The following study reviews the five most relevant policies and their impact on the way that cultural resources contribute to community resilience. While these policies took real steps toward creating a more resilient environment, each policy and intervention prioritized physical and environmental recovery as a vehicle for economic recovery, excluding an analysis of long-term impact on community resilience by largely failing to incorporate consideration of cultural heritage and resources. Analysis of policy and planning initiatives undertaken by the National Park Service, New York City Parks and Rec, and the New York City Landmarks Preservation Commission reveals that historic preservation and cultural resources face roadblocks to being integrated with other climate-change, disaster-response, and urban regeneration policies. The study illuminates that lack of inclusive recovery priorities in the Rockaways stems from a lack of collaboration among government levels. To address this issue managing agencies must take on a more holistic view of recovery and community resilience in the urban environment.

Keywords

community resilience, cultural resources, policy, rockaway, climate change

Disciplines

Historic Preservation and Conservation

Recovery of the Rockaways: An Analysis of the Role of Cultural Resources in Public Policy after Hurricane Sandy and its Effect on Community Resilience

Katherine Brill

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Table of Contents

	Acknowledgements.....	ii
	List of Figures.....	iv
I.	Introduction	1
II.	Evolution of the Rockaways.....	6
III.	Hurricane Sandy	14
IV.	Literature Review	17
	IV.1 Community Resilience.....	17
	IV.2 Historic Preservation and Climate Change Policy.....	21
V.	Multi Agency Jurisdiction: Government Management on the Rockaways.....	24
VI.	The National Park Service in Response to Hurricane Sandy.....	29
VII.	United States Army Corps of Engineers Plan.....	37
VIII.	New York City in Response to Hurricane Sandy.....	41
	VIII.1 Special Initiative for Rebuilding and Resilience.....	43
	VIII.2 Rebuilding the Boardwalk: A Symbol of Resilience?.....	46
	VIII.3 Rezoning the Rockaways	51
	VIII.4 The Role of the New York City Landmarks Preservation Commission.....	56
IX.	Conclusions	59
X.	Recommendations	61
	Figures	65
	Bibliography	90
	Index.....	102

List of Figures

1. Rockaway Peninsula Locator Map.....	65
2. Government Jurisdiction on the Rockaway Peninsula, Queens, New York City.....	66
3. Neighborhoods of the Rockaways.....	67
4. Landmark Designation on the Rockaway Peninsula, Queens, New York City.....	68
5. Architectural Character of the Rockaways.....	69-73
6. Timeline of Events, Initiatives and Interventions in the Rockaways: 1970's until Present	74
7. A Colony of Historic Rockaway Bungalows.....	75
8. Rockaway Beach & Rockaway Park circa 1940.....	75
9. Rockaway Boardwalk and Beach circa 1939.....	76
10. Rockaway Playland.....	76
11. Ocean Bay Apartments.....	77
12. Rockaway Beach circa 2018.....	77
13. Destruction in the Rockaways After Hurricane Sandy.....	78
14. Rockaway Boardwalk Damage After Hurricane Sandy.....	78
15. Destruction in the Rockaways After Hurricane Sandy.....	79
16. Rockaway Boardwalk Damage After Hurricane Sandy.....	79
17. Property Damage on the Rockaway Peninsula After Hurricane	80
18. New York City DOB Building Survey Data.....	80
19. DOB Condition Tags in South Queens.....	81
20. Building Condition Breakdown in South Queens.....	81
21. Jacob Riis Bathhouse.....	82
22. Historic Photo of Jacob Riis Bathhouse 1969.....	82
23. Riis Park Parking Lot.....	83
24. Jacob Riis Bathhouse Restoration.....	83
25. Jacob Riis Bathhouse Restoration.....	84
26. Jacob Riis Bathhouse Restoration.....	85
27. Riis Park Handball Courts	85
28. Rockaway Beach Completed Boardwalk 2019.....	86
29. Renderings for New Development in Far Rockaway.....	86
30. 101 st Police Precinct.....	87
31. Tentative USACE Plan for Storm Mitigation.....	88
32. Section Plan for Seawall Construction.....	89

I. INTRODUCTION

Hurricane Sandy left a wake of destruction in New York City in 2012, and the Rockaway Peninsula on the southern Atlantic shore of the borough of Queens (figure 1) endured a great deal of damage. Historically, the Rockaway shoreline evolved into a place of retreat. Hosting countless visitors as well as seasonal and permanent communities, the devastation caused by the Hurricane catalyzed immense recovery efforts led by the City of New York and the National Park Service (NPS) both of which manage about half the peninsula (figure 2). Throughout the recovery process, multiple policies and municipal interventions were developed to optimize resilience in the Rockaways. The function of responsive policies to natural disasters raises questions about their scope of impact and ultimate effectiveness on the resilience of the targeted region. This thesis assesses selected policies and sub-policies created by local, state and national bodies of government in response to the storm, and their effectiveness on the resilience of cultural resources on the Rockaway peninsula. Analysis of each policy and their relationship (or lack thereof) to one another reveals a need for a more integrated approach to storm recovery management in vulnerable urban areas. For the purpose of this study, resilience is defined as the ability for the natural, built, and community resources to recover and adapt in the face of adverse conditions that allows them to be sustained in a stronger capacity than before. This definition implies that recovery will not result in complete transformation, but instead an enhancement of extant resources in response to local heritage and the historic environment.

In the case of the Rockaways, policies implemented post-Sandy prioritized physical and environmental recovery as a vehicle for economic recovery, excluding an analysis of long-term

impact on community resilience as they failed to incorporate consideration of cultural heritage and resources. Valuable oceanfront property and communities around the world are at increasing risk of loss due to climate change. Even with physical interventions and protection of land and fabric, increased investment in storm ridden areas that were previously neglected is beginning to spur coastal development that enhances their function as waterfront destinations.

New York City is a dense urban environment that also hosts a significant amount of coastal public resources. New York City Parks manages over 14 miles of beaches,¹ such as the Rockaways, that are a haven to city residents and visitors on hot summer days. The established seasonal attractions in the Rockaways drives a majority of the economic and social activity within local neighborhoods. The peninsula hosts a significant portion of the city's public beaches and is a year round residence to over 115,000 residents.² Beachfront communities in the Rockaways are home to a unique cultural heritage and value placed on this region of the city is recognized by a multitude of New Yorkers.

Long-standing businesses and residential buildings represent the rich cultural and architectural history in the Rockaways. After Hurricane Sandy, public awareness of the vulnerability of the Peninsula's fabric and landscapes skyrocketed. The disaster catalyzed extensive efforts to restore or rebuild the buildings and beaches and resulted in numerous policy initiatives to revitalize the peninsula. The Rockaway peninsula is home to a section of Gateway National Recreation Area meaning that both the Federal and Local governments have jurisdiction within a concentrated area of the 9-mile strip of land. After a long period of

¹ "Beaches," Beaches : NYC Parks, <https://www.nycgovparks.org/facilities/beaches>. Accessed March 17, 2020.

² New York City, *Queens Community District 14: Rockaway and Broad Channel*, Community Health Profiles, New York City Department of Health, 2015.

disinvestment at the end of the 20th century, Sandy proved the protection of the Rockaways inadequate.

In the face of climate change, coastal communities are particularly vulnerable to rising sea levels and an increase in severe storms.³ A combination of the two increases the amount of flooding during hurricanes as storm surges and high tides bring the water increasingly higher onto land along the coast.⁴ Rising water levels threatens the built environment, landscapes, and displaces residents. The Rockaway peninsula with an abundance of public and private historic buildings and landscapes is particularly at risk to this phenomenon. Therefore, the protection of the cultural values of the Rockaways in both the natural and built environments need to be integrated as market-led revitalization capitalizes on environmental-led preservation efforts. There is an inextricable link between the built, economic and social dimensions of urban environments which underlines the mutual effects of responses to climate change in any one of them. To account for the ways in which economic investment along the shoreline may affect cultural resources in the face of climate change it is dangerous to linger in the liminal space between the use-value of the shoreline and “coastal communities that....must begin to critically engage with change.”⁵

When physical resilience is prioritized, community resilience may be compromised, and increased recognition and consideration of cultural resources in the resilience process offers a solution to negate that outcome. The preservation of cultural resources is a necessary tool to

³ Sea levels have risen over 19 cms (approx. 6.5 in) globally over the past 120 years and projected to almost double that over the next 40. “Climate Change,” United Nations (United Nations), accessed February 13, 2020, <https://www.un.org/en/sections/issues-depth/climate-change/>

⁴ Storm surges begin up to 8 inches higher than they did a century ago.

Denchak, Melissa. “Flooding and Climate Change: Everything You Need to Know.” NRDC, April 20, 2020. <https://www.nrdc.org/stories/flooding-and-climate-change-everything-you-need-know>.

⁵ *Ibid.*

make storm recovery a more inclusive process. Incorporation of historic preservation into the recovery process helps to return compromised urban settings to their previous state. Disregard for the historic environment instead of building off of its extant cultural resources puts the region at risk to losing character in favor of new development hence transforming the built and social environments; the antithesis of the stated definition of resilience.

Public policy plays an integral role in the trajectory of recovery and ultimate resiliency after natural disasters. Federal and local governments have the responsibility to provide immediate aid and resources to the affected region and also to implement policy that will promote growth and protect those regions against future catastrophe. Climate related and resilience policies and initiatives existed in New York City before Hurricane Sandy. After the storm many more were implemented to address the damage incurred. For this review, the five policies and initiatives analyzed were selected to highlight the recovery process and effective resilience (or lack thereof) on the cultural and built environments in the Rockaways. The five policies are the National Park Service and Federal Emergency Management Agency (FEMA) Programmatic Agreements for New York City, RFP for the Jacob Riis Bathhouse, The United States Army Corps of Engineers Integrated Management Plan for the Rockaways, SIRR Report and Hurricane Sandy Response Plan under the Bloomberg Administration, and Rockway Neighborhood Rezoning. The selection spans a range of Federal and local policies. Certain policies, such as the programmatic agreements, directly target historic assets, while the others intend to assist in general civic and economic recovery. The intention in choosing these policies over others is to observe the intersection of the Federal and Local governments within a condensed geographic area and their respective approaches to cultural resource management

in the age of climate change. Testing the idea that integration of different scales of policy (city and Federal) is a key factor in the overall success of resilience planning in urban environments.

Section II provides an overview of the Rockaway peninsula and its developmental evolution over the past 100 years. It explains how the regional history is reflected in current community dynamics. This overview will also identify historic and cultural assets—both officially designated and not designated —that contribute to the significance of the region. Section III describes the effects of Hurricane Sandy on the Rockaway Peninsula. Section IV reviews literature addressing the scholarship surrounding the resilience of cultural heritage, both in terms of physical resilience as well as community resilience in the face of climate change.

The Rockaway peninsula, as the defined study area, maximizes cultural values through the intersection of people, heritage, and the natural environment⁶ co-existing in a symbiotic relationship. These factors within a condensed geographic region pose as an ideal setting for the review of coastal management practices. The microcosm of the Rockway Peninsula is additionally subject to cross-government policies at the federal and local levels. This range of managing bodies will help to draw greater conclusions about the implementation of adaptation policy and resilience measures for cultural resources a risk to climate change. Section V describes the dynamic between the National Park Service and the City of New York and their managerial agreement on the peninsula. Each recovery policy being reviewed was created to target specific aspects of climate change, such as economic growth, spatial organization, environmental impact and intervention or historic preservation. An individual assessment of

⁶ Khakzad, Sorna. "Integrated Approach in Management of Coastal Cultural Heritage." Dissertation, KU Leuven, Science, Engineering & Technology, 2015.

each would be pointless without then analyzing the ways in which their outcomes may impact one another.

The remainder of the thesis is organized in the following sections: Sections VI, VII and VIII dive more deeply into the role of Federal, and Local Government and their subagencies, primarily the National Parks Service, SHPO, United States Army Corps of Engineers, NYC Parks and Recreation, the Mayor's Office and the Department of City Planning and their individual contributions to each policy and intervention. Primary analysis focuses on the dichotomy between the prioritization of physical resilience and the subsequent effects on community resilience. Economic recovery as a product of physical recovery in the Rockaways overwhelmingly dominates the intentions of each agency. In decisions surrounding investment in regenerative interventions, profit is prioritized at the expense of nature and extant cultural resources.⁷ Questions arise from these observations about the ability to effectively preserve cultural resources through management plans when heavy investment in economic activity and public use are at the forefront of policy-makers intentions. The priorities for recovery that are highlighted through the creation of each policy emphasize the positive outcomes of short term physical intervention and protection with failure to consider long term community oriented resilience, including historic preservation and the management of social change.

Recommendations made at the end of this study intend to propose revisions to each individual policy, creations of new policies as well as increased collaboration between the governing agencies who created them. This approach attempts to induce a more holistic

⁷ Bryce B. Dubois and Setha Low. "Beaches, People, and Change: a Political Ecology of Rockaway Beach after Hurricane Sandy," 2014.

approach to storm recovery management. Collaborative policy implementation will expand the scope of resilience with more active inclusion of cultural resources in decision making.

II. THE EVOLUTION OF THE ROCKWAYS

Originally inhabited by the Native People of the Canarsee Tribe, the peninsula was purchased by the English in 1685.⁸ Minimally populated as open coastland the deed holder, a man named John Palmer, sold the land to Richard Cornell in 1767 who built his homestead on the peninsula. The wooden building, speculated to be the first structure on the peninsula was torn down in 1833 to make way for the marine pavilion, a large hotel.⁹ All the land on the rockaways can be traced back through deeds to the Cornell Family. One historic resource which still remains from the Cornell era today is the Richard Cornell Graveyard, an 18th and 19th centuries burial ground used privately by the Cornell Family.¹⁰ The site, of significant historic and archeological significance was designated a local landmark in 1970.¹¹

Construction of new homesteads and amenities on the Rockway peninsula increased as the Cornell family divided and sold their land among other parties throughout the 18th and 19th. Many homes and hotels were constructed to generate revenue for landowners,¹² particularly throughout the 19th century, none of which still stand today. For the purposes of this study, the

⁸ Alfred H. Bellot, *History of the Rockaways: from the Year 1685 to 1917: Being a Complete Record and Review of Events of Historical Importance during That Period in the Rockaway Peninsula, Comprising the Villages of Hewlett, Woodmere, Cedarhurst, Lawrence, Inwood, Far Rockaway, Arverne, Rockaway Beach, Belle Harbor, Neponsit and Rockaway Point* (Far Rockaway, NY: Bellots Histories, 1918),10.

⁹ Bellot, *History of the Rockaways*, 14.

¹⁰ "Richard Cornell Graveyard," HDC, <https://hdc.org/buildings/richard-cornell-graveyard/> Accessed February 26, 2020.

¹¹ "Discover New York City Landmarks." ArcGIS Web Application, n.d. Accessed March 20, 2020. <https://nycplc.maps.arcgis.com/apps/webappviewer/index.html?id=93a88691cace4067828b1eede432022b>

¹² Bellot, *History of the Rockaways*, 15-25.

period of significance is defined as starting in the 1920's until present. This 100-year period encapsulates the evolution of social and political factors that define the historic communities, built environment, and landscape as it exists today. However, the one constant resource that spans the entirety of the Rockaway narrative as a part of the 'new world' is the beach. Beginning during the colonial settlement and prevailing today, the value of seaside property and congruent human experience characterizes the cultural significance of the Rockaways. It is the inherent attraction to coastal resources, and the different associations and uses? of the coastline in urban settings that defines the evolution of the socio-economic and developmental patterns on the peninsula.

As the popularity of the Rockaways grew toward the end of the 19th century, a connector between Brooklyn and Queens was constructed to increase access to greater New York City and Long Island Residents. During this period there was extensive growth in mass leisure markets. As new jobs in industry and urban development increased, working class families had the means to take time for leisure activities and retreats. This trend increased demand for public spaces such as parks, beaches, and entertainment activities where families and individuals could spend their time (figures 9 and 10). The Rockaways, with miles of public beaches fulfilled those demands. "Further railroad development in the Rockaways was closely tied in with the growth and interest in Rockaway beach."¹³ The influx of visitors sustained the creation of public amenities such as Seaside amusement park which further catalyzed the retreat and beach culture which continued to flourish during the early 20th century.

¹³ "History of the Rockaways," Reprinted from The Rockaway Review, 1948, Chamber of Commerce of the Rockaways, www.farrockaway.com.

Around 1920, the Rockaways became subject to the “bungalow craze.” The small pre-fabricated structures were heavily advertised around the country in home goods and constructions magazines.¹⁴ At the same time, New York City was growing rapidly, and the large influx of immigrants exacerbated inner city crowding, which made outdoor space, especially for children extremely appealing. A man named John J. Eagan took advantage of this phenomena and purchased 20 bungalows from Michigan and set them up on beach 108th street in the Rockaways. These houses “became a profit making vehicle and were advertised as summer vacation homes.”¹⁵

Quickly, the trend took off and soon the peninsula was covered with “bungalow colonies,” characterized by their single story massing, pitched rooves, centered dormer and front porches (figure 7). Constructed in rows, the continuity of the porches and fronts pace created close knit communities, when entire families could occupy a block and spend the summers in close quarters with immediate proximity to the beach. By 1933 there were 7000 bungalows in the Rockaways.¹⁶ The bungalows are seen as “vacation architecture of the working class....[they] recreated [the] dense urban environment as a summer resort area”¹⁷

Within the Rockaway communities, the common thread of middle class was divided racially by specific neighborhoods (figure 4). Three neighborhoods on eastern part of the peninsula toward Far Rockway were primarily Jewish. Moving west an area called Hammels was occupied by an African American community, and then finally the Seaside neighborhood known

¹⁴ Jennifer Callahan and Elizabeth Logan Harris, *Bungalows of the Rockaways*. Streamed. Directed by Jennifer Callahan. New York, Independent: 2009.

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ Andrew S Dolkart as quoted from *Bungalows of the Rockaways, documentary* at Approx. 8 mins.

as “Irishtown” to local residents.¹⁸ Each ethnic community remained fairly insular, with little social interaction between them. Residents recall the separateness and acknowledge bias and racism that existed during that time.¹⁹ The Bungalows encapsulated the architectural identity of the early 20th century in the Rockaways. Their development created distinct social dynamics and communities who occupied the region both seasonal and year-round. By 1930, the population grew up to 30,000 permanent residents²⁰ but, after WWII, new social conflicts and corresponding urban planning initiatives under the rise of Robert Moses gave the Rockaways a turn for the worst.

As sections of New York City were razed for highways in the period of 1950-1965, many displaced low income and communities of color were relocated to the Rockaways, where Moses had built up multiple high rise buildings for Title 1 housing, such as the Arverne houses, now known as the Ocean Bay Apartments (figure 11). In addition, the Department of Welfare was paying rents for displaced residents to live in bungalows which at that point were derelict properties. While residents lived in horrible conditions landlords were making money on properties that were becoming increasingly worthless. Lost to disinvestment, demolition by neglect and extensive razing under urban renewal plans, only about 400 Bungalows remained in the Rockaways as of 2008.²¹ In light of mid-century planning ideals, city officials, in particular Robert Moses, viewed the peninsula as an opportunity zone for future development and after bulldozing the land in a “fit of optimism” left it vacant and desolate for decades. They wanted to remove blight but ended up creating it.²² Along the same timeline, the 1961 zoning resolution

¹⁸ Callahan and Harris, *Bungalows of the Rockaways*.

¹⁹ *Ibid.*

²⁰ “History of the Rockaways.”

²¹ Callahan and Harris, *Bungalows of the Rockaways*.

²² *Ibid.*

allowed the construction of high rise beach front property that was severely out of character in comparison to the low-rise houses and bungalow communities that once prospered.

Finally, in the 1980's New York City residents who frequented the Rockaways as children started taking interest in what was left of the bungalow colonies, electing to buy and preserve them. As the communities slowly repopulated, residents created the Beach Bungalow Preservation Association that fought and continues to fight against disruptive or out of character development that threatens the integrity and quality of living in the remaining bungalow communities. They have done so by getting the Far Rockaway bungalows listed on the State and National register of Historic Places and coming together to support the proposal of a rezoning initiative that was ultimately passed in 2008 to downzone certain Rockaway neighborhoods.²³

In addition to the Far Rockaway Bungalow National Historic District, four other individual properties are recognized on the national register such as the Far Rockaway Post Office, Rockway Courthouse, and Temple of Israel Synagogue.^{24,25} All of which are products of the initial population boom described during the 1920's and 30's and are lasting examples of social and civic infrastructure built to accommodate the growing communities and their distinct identities.

Formal recognition of historic resources on the peninsula is limited with only four locally designated historic buildings—all public buildings such as firehouses and police stations—in addition to the Cornell Graveyard²⁶ (figure 3). Therefore, proper historic and resilience

²³ Callahan and Harris, *Bungalows of the Rockaways*.

²⁴ "Temple of Israel Synagogue," National Parks Service (U.S. Department of the Interior), accessed February 13, 2020, <https://www.nps.gov/nr/feature/places/13001156.htm>

²⁵ National Register of Historic Places, Queens County, New York City.

²⁶ "Discover New York City Landmarks." ArcGIS Web Application, n.d. <https://nyclpc.maps.arcgis.com/apps/webappviewer/index.html?id=93a88691cace4067828b1eede432022b>.

management is not readily incorporated adaptation plans and public policies. Because of the lack of recognition of cultural resources, it is important to both formally and informally acknowledge them to preserve the narrative of the peninsula. A “collection of villages, each of which has its own permanent resident population, its own religious, civic and social centers and activities and its own pride, achievement and aspirations.”²⁷

Three of the nine total landmarked buildings in the Rockaways (outside of Gateway) were designated before 2012, demonstrating increased awareness of the vulnerability of cultural resources on the peninsula. However, the three-block Far Rockaway Beach Bungalow Historic District, although put on the New York State historic register in 2005, was not nationally recognized until 2013. The high volume of designations after 2012 directly correlates to Hurricane Sandy and the increased effort from the public to protect certain buildings. All the designations with the exception of the Far Rockaway Bungalow District are individual landmarks. Absence of districts is a weakness in current landmark designation because there is no regulation of the historic integrity of full neighborhoods or regions of the peninsula. Including districts forces planners and residents to consider the broader context of the built environment, which encourages a more holistic view of cultural resources and moves toward the type of strategy needed for inclusive resilience.

Today, the Rockaways are on the upswing. As a summer migration once again consumes the Rockaway beaches (figure 12), and local businesses are back on their feet. A deeply rooted community of surfers bob through the waves, and the city is investing more than ever in public amenities and programming. As public use is skyrocketing the peninsula is facing increasingly persistent threats of erosion, flooding, and powerful storms. For the legacy of the peninsula to

²⁷ Bellot, *History of the Rockaways*, 7.

be perpetuated for future generations, the historical evolution of the social and architectural environments is identified here as the basis for the integration of cultural resource protection into resilience policy.

Perhaps even more important than the historic buildings mentioned are the beaches as a natural and recreational resource and cultural landscape that sustained the relevance of the Rockaway peninsula throughout its rise and fall, and rise again. A recent anthropological study explained, “there is an emphasis on the beach as a public space that meets multiple cultural interpretations and needs. But beaches are also highly valued economic spaces both for tourism and the real estate near the beach.”²⁸ Throughout the evolution of the peninsula, the 20th century brought multiple waves of development that define the architectural character of the peninsula today (figure 5). Diversity and spatial arrangement of the range of architectural styles, scales, and conditions exists as a narrative of the social, cultural and political factors that influenced the history of the region.

During the boom of bungalow development on the western half of the Rockaway peninsula, the eastern end was growing as one of the premiere public beaches in the city, after Coney Island. Jacob Riis Park, known as ‘The People’s Beach’, opened to the public in 1912. The Park hosts several historic structures, including the pavilion built in 1920 and most prominently, a large Art Deco style bathhouse designed by Josh L. Plock, which was completed and opened to the public in 1932²⁹ (figures 21 and 22). The park remained under ownership of New York City until 1972 , when it was given to the National Park Service and is now a part of The Jamaica Bay

²⁸ Dubois and Low, “Beaches, People, and Change.”

²⁹ Ariel Kates, “Beyond the Village and Back - Jacob Riis Park’s Art Deco Bathhouse - GVSHP | Preservation | Off the Grid,” GVSHP, May 08, 2018, , accessed April 21, 2019, <https://gvshp.org/blog/2018/05/08/beyond-the-village-and-back-jacob-riis-parks-art-deco-bathhouse/>.

section of Gateway National Recreation. Gateway National Recreation Area consists of landscapes and historic structures in Staten Island; Sandy Hook, New Jersey; and Jamaica Bay, Queens where Riis Park and the Rockway Beaches are located.

During the period of Urban Renewal, Robert Moses contributed to the development of the beach by adding an Art Deco façade to the bathhouse and constructing a boardwalk. It was also during this time that he commissioned the construction of two bridges connecting Brooklyn to the peninsula³⁰ (fig). Unlike the segregation felt in the Eastern peninsula communities and far Rockaway, Riis Park developed as a haven for all New Yorkers, blurring lines of race and sexual orientation. “Perhaps the most noteworthy aspect of life at Riis Park is the ‘culture of creativity,’ a set of norms that allow all the groups which frequent the park to get along despite great diversity”³¹ However, the cultural value of the park did not grant immunity to the disinvestment that plagued the rest of the Rockaways. The bathhouse fell into disrepair and the discovery of asbestos led to its closure. After restoration funding ran out, preservation was put on hold and the building and surrounding structures lay primarily vacant for almost 30 years.³²

III. HURRICANE SANDY

After the many visions for the Rockaways were put on pause, the long period of disinvestment in buildings, infrastructure and public spaces during the late 20th and turn of the 21th century left physical and environmental assets vulnerable. Consequently, damages endured by Hurricane Sandy were heightened. On October 29th 2012, the night that Sandy made landfall

³⁰ Callahan and Harris, *Bungalows of the Rockaways*.

³¹ Terry Williams and William Kornblum, “Segregation and Use at Riis Park,” City University of New York, Nation Park Service, https://www.nps.gov/parkhistory/online_books/gate/jacob_riss.pdf.

³² Kates, “Beyond the Village and Back.”

over New York. A full moon combined with high tide provided the disastrous conditions that caused storm swells to reach their peak heights. Rockaway Peninsula in particular, as well as sections of lower Manhattan and Southern Brooklyn faced extreme flooding and wind damage. Over 51 square miles of New York City were flooded and surpassed the designated 100-year flood plain by over 53% in area.³³ In Queens alone over the flooding exceeded twice the amount of the flood area indicated on the flood trajectory map.³⁴

On top of the flooding experienced on the Rockaway Peninsula, a series of fires broke out in the days following the storm. Sea water infiltrated power lines causing them to ignite, exacerbating the extent of damage to the already disheveled area.³⁵ Houses were washed off of their foundations, sand and debris littered the streets and the historic boardwalk was ripped off its foundation. Additionally, over 1.5 million cubic yards of sand were displaced.³⁶ (figures 13-17)

“In all [of New York City], 88,700 buildings were in this inundation zone—buildings containing more than 300,000 homes and approximately 23,400 businesses.”³⁷ In the weeks following the storm New York City Department of Buildings did a survey of all the impacted areas and rated buildings based on their condition. They categorized buildings in three groups as seen in Figure 19 . The classifications are: destroyed (tagged in black), significant structural damage (tagged in red and damaged and potentially unsafe (tagged in yellow). About 24% of the buildings within the Sandy Inundation zone were located in South Queens and out of all tagged buildings

³³ A floodplain is a low elevation area adjacent to a body of water that is subject to flooding.

³⁴ *PLANYC A Stronger More Resilient New York*. The City Of New York: Mayor Michael R. Bloomberg, n.d. (2013).

³⁵ Conlin, Michelle. “Huge Fire in Sandy's Wake Destroys New York City Beach Community.” Reuters. Thomson Reuters, October 31, 2012. <https://www.reuters.com/article/us-storm-sandy-fire/huge-fire-in-sandys-wake-destroys-new-york-city-beach-community-idUSBRE89U01T20121031>.

³⁶ Foderaro, Lisa W. “Racing the Clock in the Rockaways.” The New York Times. The New York Times, May 18, 2013. <https://www.nytimes.com/2013/05/19/nyregion/in-rockaways-racing-the-clock-to-repair-the-beach.html?module=inline>.

³⁷ *A Stronger More Resilient New York*, SIRR, 311

throughout the city, 37% of those buildings were in South Queens alone (figure 20).³⁸ These statistics indicated a disproportionately high percentage of damage within a small region of New York City.

In the built environment, building ages and corresponding construction methods have a direct impact on the facilitation of storm mitigation implementation. Owners of properties most vulnerable to the effects of climate change, particularly sea level rise, face significant challenges when retrofitting their structures, especially if the building is historic. Historic buildings are often constructed with specific materials and use building methods that are considered obsolete. With the rapid increase in building technology over throughout the 20th century, electrical, plumbing, and HVAC systems in older buildings may be outdated and hard to replace without disturbing the integrity of a building. Additionally, in regard to climate change and flooding older buildings may have basements, and sub terrain foundations that are challenging to alter. About 78% of the buildings within New York's 100-year floodplain, as well 78% of buildings within South Queens alone were constructed before 1961 when modern building codes and before flood protection standards were integrated into building design.³⁹ As a result, the historic fabric of the Rockway peninsula is at higher risk to the threats of flooding. The environmental context of the Rockaways as a thin, barrier peninsula adds another layer of vulnerability to the region. Challenges endured when retrofitting a building for flood resistance are amplified by the soft sandy and silty land mass that the peninsula is composed of.

Climate change impacts and flood-plain growth are projected to increase in coming years. As predictions are constantly changing, resilience efforts must constantly adapt to project

³⁸ *Ibid.*

³⁹ *A Stronger More Resilient New York*, SIRR, 78.

outcomes and risks far into the future. The effects of Hurricane Sandy in the Rockaways were catastrophic and re-enforce the need to prepare (plan and manage policies) more holistically, including investment in the survey of extant cultural resources both tangible and intangible. Identification of the cultural resources on the peninsula is essential in optimizing their protection. Once cultural resources are recognized, managing agents can incorporate their individual and collective values into the planning process, giving them access to the resilience measures facilitated by public policy. Effects of Hurricane Sandy in the Rockaways emphasized the marriage of the physical environment as a foundation to support the cultural environment. Heavy public reliance on the beaches and seasonal activities directly impacted decisions made during the policy creation process. Every decision impacting the built environment underlines the need for integrated management of resilience planning to ensure a sustainable recovery for a culturally significant environment that is actively used and remains a popular destination.

IV. LITERATURE REVIEW

Major themes of community resilience and Historic Preservation through climate change policy inform the realm of literature surrounding the topics addressed in this study. Research on community resilience explores the intersection of policy and recovery and how top-down intervention can aid or hinder the protection of cultural resources after natural disaster. Because this study focuses on the impact of the specific event of Hurricane Sandy in a specific region, The Rockaway Peninsula, the amount of applicable literature targeting the conflicts of climate change and resilience planning in that region is relatively limited. However, there are many case studies and analyses surrounding resilience regarding climate change and communities and climate change and historic resources, but not all three at once. Because

Hurricane Sandy occurred in the recent past, analyses of resilience efforts and implementation of public policy and interventions regarding the storm is primarily covered through reliable media sources and a small selection of scholarly research.

IV.1 Community Resilience

The realm of scholarship surrounding community resilience examines the role of intangible heritage and resources in disaster recovery processes. Threats of climate change are often addressed in response to the natural and built environments and tend to exclude discussions of the effects of climate related events on vulnerable communities and their capacity to adapt. Many scholars recognize this disconnect between the protection of the physical vs the protection of extant communities. Results and conclusions of this scholarship tend to focus on the reaction of communities to come together and engage in self-generated support systems after natural disaster. These reactions are often triggered by inequitable top-down recovery systems that favor resourced communities over those that are disadvantaged.⁴⁰ The other major theme in this body of literature is that government intervention plays a vital role in the economic investment in storm recovery.⁴¹ Broad acknowledgement of the inherent inequities that exist in the practice of resilience reinforces the use of climate change adaptation to perpetuate spatial injustice in regions with limited resources and unstable governance.⁴²

⁴⁰ Graham, Leigh, Wim Debucquoy, and Isabelle Anguelovski. "The Influence of Urban Development Dynamics on Community Resilience Practice in New York City after Superstorm Sandy: Experiences from the Lower East Side and the Rockaways." *Global Environmental Change* 40 (2016): 113.

⁴¹ Stine Aakre & Dirk T.G. Rübbecke (2010) Objectives of public economic policy and the adaptation to climate change, *Journal of Environmental Planning and Management*, 53:6, 767-791,

⁴² Anguelovski, I., Roberts, D., Carmin, J., Agyeman, J., 2011. Spatial justice and climate change: multiscale impacts and local development in Durban, South Africa. *Environ. Inequalities Beyond Borders: Local Perspective. Global Injustices*, 21.

Municipalities “update their building codes, zoning ordinances, land use plans, and capital investment policies to avoid development in risk-prone areas or to raise standards for construction.”⁴³ These actions cause increased development and heavy investment in post-disaster reconstruction and regeneration of neighborhoods that show economic stability and potential, keeping under-resourced communities in the same state of disinvestment in risk-prone areas that they have historically existed in.⁴⁴ The Rockaways are no exception as the lower income bay-side communities endure persistent flooding as a product of climate change with little support from the local government.⁴⁵

In “Agency, capacity, and resilience to environmental change: lessons from human development, well-being, and disasters, Brown et al acknowledge a sense of optimism behind the definition of resilience as the practice of bouncing back, with largely positive connotations.”⁴⁶ This sense of exclusively positive outcomes evades the imbalances that occur in the resilience process. To account for the evolutionary nature of resilience they enforce the importance to “recognize it as a dynamic process that results from ongoing transactions.”⁴⁷ Broadening the scope of resilience to account for the process as well as the outcome, they specifically incorporate the ideas of psychological impact and human development in response to climate related disasters. Further scholarship identifies the distinction between resilience and adaptability, defining adaptation as the capacity of all actors to achieve a state of resilience⁴⁸

⁴³ Graham, Leigh, Debucquoy, and Anguelovski. “The Influence of Urban Development Dynamics.”

⁴⁴ *Ibid.*

⁴⁵ Erdos, Emily. “Hurricane Sandy and the Inequalities of Resilience in New York.” *The American Prospect*, October 5, 2018. <https://prospect.org/infrastructure/hurricane-sandy-inequalities-resilience-new-york/>.

⁴⁶ Brown, K., Westaway, E., 2011. “Agency, capacity, and resilience to environmental change: lessons from human development, well-being, and disasters”. *Annual Review of Environmental Resources*.

⁴⁷ *Ibid.*

⁴⁸ Walker, B., Holling, C.S., Carpenter, S.R., Kinzig, A., 2004. Resilience, adaptability and transformability in social–ecological systems. *Ecology. Soc.* 9, 5.

The intersection of process and adaptability enforces that resilience is a continuous process. As threats of climate change are increasing, the future of urban environments is dependent on “plausible transformations and bringing them into social decision processes.”⁴⁹ Variances in the specific socio-political and economic dynamics in any given place require site specific strategy that includes input from community members as well as political leaders. Inclusive planning is productive in the creation of adaptive measures that will effectively mediate change.

One particular study specific to the Rockaways uses a matrix approach to score and measure the resilience of the Rockaway peninsula.⁵⁰ Cate Fox-Lent et al. created a set of metrics to determine resilience and primarily illustrates the use of measurability in defining and predicting resilience. They identify that the area was previously disinvested prior to Hurricane Sandy and illustrates that the government will then use funding to restore the region to a preexisting state rather than an improved one.⁵¹ While there are many comparable attempts to identify resilience methodology and assess and improve measurable outcomes, the limitation of these studies highlight the challenges and lack of research surrounding the measurability of community resilience specifically.⁵² Recognition of the limited investigation of community based resilience interventions leads to further questions about the role that impacted localities have in the adaptive planning taking place in their domain. Next steps undertake the inclusion of

⁴⁹ *Ibid.*

⁵⁰ Fox-Lent, Cate, Matthew E. Bates, and Igor Linkov. “A Matrix Approach to Community Resilience Assessment: an Illustrative Case at Rockaway Peninsula.” *Environment Systems and Decisions* 35, no. 2 (2015): 209–18. <https://doi.org/10.1007/s10669-015-9555-4>.

⁵¹ *Ibid.*

⁵² Cutter, S.L., Ash, K.D., Emrich, C.T., 2014. The geographies of community disaster resilience. *Global Environ. Change* 29, 65–77.

communities in the resilience planning process, and the need for increased lines of communication between professional and residents of areas already impacted, or at risk.⁵³

One dissertation specifically embodies a psychological lens of the responses to Hurricane Sandy in the Rockaways and the resulting tensions created between the natural environment and social groups and individuals. Authors Bryce Dubois and Setha Low's analysis observes the direct correlation between the restoration process following Hurricane Sandy and the shifting perception of the beach and relationships between visitors, locals with this specific cultural asset.⁵⁴ His primary focus on the restoration practices of the beach specifically identifies the power sources, and community participation in the process. Similarly, Leigh Graham et al examine the aftermath of hurricane sandy in the Rockaways focusing on community based resilience measures. He exposes that in the "Rockaways, there is no collective disaster preparedness or coordination among different community-based organizations in order to prepare for a future disaster."⁵⁵ This observation highlights the previous disinvestment in the peninsula as opposed to gentrified areas in Manhattan who receive superior municipal support and therefore have developed robust community organizations who were more prepared for the effects of Hurricane Sandy.⁵⁶ This body of work also recognizes the immediate deep investment in beach restoration after the storm noted by Dubois. Both studies are significant contributions to this study of the Rockaways as they provide insight about the specific community resources that exist on the peninsula as well as public perceptions and personal

⁵³ Madelein Helmer "Cultural Landscapes and Adaptation: Identifying the Role of Civic Engagement and Cultural Heritage in Coastal Adaptation Planning," (Masters Thesis). University of Pennsylvania, Philadelphia, PA, 2017.

⁵⁴ Dubois and Low. "Beaches, People, and Change".

⁵⁵ Graham et al, "Influence of Urban Development," 118.

⁵⁶ *Ibid.* 118.

relationships with the study area. Each analysis reinforces the inequities of the storm recovery process in the region that the analysis of this paper argues is the result of the narrow scope of Resilience policies.

Research surrounding the topic of resilience highlights the need to include community involvement in resilience planning but does not define communities as historic or cultural resources and does not incorporate other cultural attributes/assets. All of this research defines the inherent inequalities that exist in government responses to climate change and lacks the inclusion of a discussion of cultural or historic links between the built environment and extant communities. This paper poses to fill the gap in the relevance of the role of cultural heritage in literature addressing the intersection urban resilience, public policy and climate change in regard to the intersection of spatial and social vulnerability.

IV.2 Historic Preservation and Climate Change Policy

Existing research on climate change policy tackles economic and social dynamics but does not look at their intersection with the built environment, specifically the historic built environment. Certain pieces of literature and recent reports focus on the broad impacts of climate change on tangible heritage and responses implemented by managing government agencies. Elena Setsana et. al tackle the idea of the challenges and barriers in achieving successful adaptation of cultural heritage to climate change.⁵⁷ However, their focus pinpoints specific “cultural heritage sites” defined as “historical buildings, monuments, and archaeological

⁵⁷ Elena Sesana, Alexandre Gagnon, Chiara Bertolin, and John Hughes. “Adapting Cultural Heritage to Climate Change Risks: Perspectives of Cultural Heritage Experts in Europe.” *Geosciences* 8, no. 8 (2018): 305.

sites.”⁵⁸ The heritage in question is formally recognized for its significance and value. While a particular body of work provides insight into the challenges or successes of the adaptation of defined cultural heritage, there is an absence of research into how to approach climate change risks in historic and culturally significant sites that are not formally designated as such. This issue indicative of the broader problem of dealing with the totality of urban fabric where the treatment of culturally significant buildings and landscapes is lumped in with their surroundings.

On an international scale, ICOMOS released their report on climate change titled “The Future of Our Pasts: Engaging Cultural Heritage in Climate Action.”⁵⁹ The document outlines the importance of internationally recognized heritage sites at risk to climate change, but also describes the impact on communities and their cultural identities. Departing from the primarily fabric oriented focus of most climate change documents regarding heritage sites, *The Future of Our Pasts* is particularly progressive. Cultural identity and the role of communities in the climate action process is a dimension of recovery and resilience that has not fully been tapped into. Recognition that “solidarity is needed from heritage professional with those communities most impacted by, or at least able to bear the cost of climate change including communities in Least Developed Countries and Small Island Developing States (SIDS), in order to enable them to safeguard their heritage,” is required to keep cultural groups connected to their landscapes.⁶⁰ This intersection of people, heritage and the historic built environment is lacking in policy and guidelines at the local level. Acknowledgement of under-resources groups at the international

⁵⁸ *Ibid.*

⁵⁹ ICOMOS, “The Future of our pasts: Engaging Cultural Heritage in Climate Action,” 2019, www.icomos.org.

⁶⁰ *Ibid.*

scale needs to be translated to new policies and initiatives on the local scale including, states, counties, and most importantly individual cities.

Another example of international policy is UNESCO's Historic Urban Landscape Approach (HULA) which exemplifies inclusive strategies for the management of cultural resources in the urban environment. The publication "is holistic by integrating the goals of urban heritage conservation and those of social and economic development."⁶¹ Encouraging collaboration between public, private and civic actors HULA is a powerful tool in examining the management of change in culturally significant environments. Historic Urban Landscapes are defined as "historic layering of cultural and natural values and attributes, extending beyond the notion of 'historic centre' or 'ensemble' to include the broader urban context and its geographical setting."⁶² Established to encourage preservation to expand beyond the physical realm of architectural conservation, HULA is meant to address a variety of changed experienced in historic cities, including climate change. This progressive document offers a broad scope of suggestions on how to incorporate all sectors and stakeholders in the preservation process and should be adapted by local governments to best inform management processes in a way that is responsive to site-specific communities, buildings and landscapes.

One example of progressive localized climate change policy is the State of Maryland's Emergency Management and Historic Preservation Plan and guidelines for recovery.⁶³ This piece of policy is the only of its kind in the United States that specifically addresses the treatment of historic resources in response to climate change. Subsequently, historic neighborhoods within

⁶¹ UNESCO, Recommendation on the Historic Urban Landscape Approach, November 2011, http://portal.unesco.org/en/ev.php-URL_ID=48857&URL_DO=DO_TOPIC&URL_SECTION=201.html

⁶² *Ibid.*

⁶³ "Historic Preservation and Emergency Management," Flood Mitigation Guide, Maryland's Historic Buildings, June 2018, mht.maryland.gov.

the state such as Fells Point in Baltimore are adopting guidelines for historic preservation “intended to provide information to property owners and tenants on evaluating options to minimize the impact of flooding to their historic rowhouse properties.”⁶⁴ Only time, and future natural disasters will tell if the guidelines are successful. However, their existence stands as a leading example of a site specific reaction to the potential effects of climate related damage on historic fabric.

This body of research is nuanced as it targets the intersection of cultural resources and historic preservation through public policy. Much of the analysis surrounding government intervention in the Rockaways focuses on individual bodies, either the National Park service or the City of New York. One gap in literature exists in the lack of research surrounding the intersection and lines of communication between the multiple levels of governmental stewardship. Another gap exists in the lack of available analysis of the effects of public policy on resilience in New York City specifically. Much of the writing surrounding the topic of resilience in the city revolves around past and current situations but fails to supply a concrete and evidence-backed analysis of effects of current resilience initiatives—communal, environmental, and structural—in the future.

V. MULTI-AGENCY JURISDICTION: GOVERNMENT MANAGEMENT ON THE ROCKWAY PENINSULA

The Rockaway peninsula is managed by both federal and local sectors of government. Figure 2 depicts the geospatial division of land management between the National Park Service

⁶⁴ City of Baltimore, *Fells Point Flood Mitigation Guidelines*, Commission for Historic and Architectural Preservation, December 2018.

and The City of New York. The western half of the peninsula is a part of Gateway National Recreation Area which also encompasses land and marshes surrounding all of Jamaica bay, as well as small areas of Staten Island and New Jersey's Atlantic shore. Because Gateway is a national park, the land is both owned and managed by NPS. The Eastern half of the peninsula is managed by the City of New York which means that the city and its respective agencies oversee all public infrastructure and regulate the built environment. However, within their jurisdiction is both publicly and privately owned land and buildings. The city owns and manages many buildings used for civil services, public housing as well as the Atlantic beachfront. This half of the peninsula is more densely populated with high levels of commercial and residential development. The common thread between the two jurisdictions is the nine mile stretch of Atlantic coast beaches respectively managed by NPS and New York City Parks and Recreation within the boundaries of their jurisdictions.⁶⁵ NYC Parks and Rec works under the Mayor's office and is in charge of the stewardship of all city-run parks including their programming, capital improvements and community outreach initiatives. Management is usually partnered with local non-profits and community groups who assist in the stewardship and support for specific parks. In respect to the historic environment, Parks and Rec does not incorporate historic preservation into their work.⁶⁶ New York City Landmarks Preservation Commission oversees all Historic Preservation related work for locally designated properties but does not have a close

⁶⁵ "New York City Department of Parks & Recreation." New York City Department of Parks & Recreation. Accessed April 30, 2020. <https://www.nycgovparks.org/>; "Gateway National Recreation Area (U.S. National Park Service)." National Parks Service. U.S. Department of the Interior. <https://www.nps.gov/gate/index.htm>.

⁶⁶ Eric Peterson, "NYC Parks and Recreation and Hurricane Sandy," telephone interview by author, February, 2020.

relationship with Parks and Rec. Their interaction is limited to any work being done in one of the nine scenic landscapes that are on the local register, most of which are also city-owned parks.

The National Park Service is the primary Historic Preservation agency in the United States. As a large part of their mission is to enhance communities through the practice of prioritizing the preservation of local history and cultural heritage within the National Park system,⁶⁷ and also outside it, providing technical assistance for preservation projects and working through partnerships with other government agencies and NGOs. There are over 400 national parks in the United States. Their creation and protection are enabled by the Organic Act of 1916 which legislates the mission to “conserve the scenery and the natural and historic objects and the wildlife therein.”⁶⁸

Gateway National Recreation Area was established in 1972 and is composed of three units spanning New York and New Jersey Coastlines. The section of the park on the Rockaway Peninsula is a part of the Jamaica Bay Unit which spans coastal areas throughout the Jamaica Bay inlet including marshlands, and Floyd Bennet Field. On the Rockaway peninsula Gateway encompasses Jacob Riis Park, Fort Tilden, and Breezy Point (as the most popular public destinations). All units of Gateway revolve around the network of historic buildings and landscapes and their integral role in the cultural heritage of New Yorkers and other visitors, both past and present.⁶⁹

⁶⁷ “What We Do (U.S. National Park Service).” National Parks Service. U.S. Department of the Interior. Accessed April 30, 2020. <https://www.nps.gov/aboutus/index.htm>.

⁶⁸ United States of America, Organic Act of 1916, <https://www.nps.gov/grba/learn/management/organic-act-of-1916.htm>

⁶⁹ “Gateway National Recreation Area.” www.nps.gov/gate.

In 2012 the National Park Service entered a Cooperative Management Agreement with the City of New York Parks and Recreation for Gateway National Recreation Area.⁷⁰ The agreement outlines the co-management of to pursue the enhancement of public resources and programming and laid out a foundation for the mutual support both administrative and financial as it arises.⁷¹ This type of agreement is the type of integration between agencies that is needed to create more inclusive policies. A co-management structure is a strong starting point for the introduction of further integration of missions and management strategies. Collaboration between these two particular groups has the potential to lead to resiliency planning that incorporates the treatment of cultural resources, as mentioned previously.

The co-management agreement came at an opportune moment as sections of Gateway on the Rockaways such as the Bathhouse at Jacob Riis Park were suffering after a long period of neglect. Prior to Hurricane Sandy there was a six year process to create a robust management plan for Gateway. An interview with current Superintendent of Gateway, Jennifer Nersesian revealed that Gateway has the highest deferred maintenance⁷² of all national parks. Along with the foundation of Gateway in 1972 the park inherited a lot of infrastructure including about 400 – 600 structures, “more than it needed or had the capacity to maintain.”⁷³ Additionally, by that point many of the resources were already very deteriorated.

⁷⁰ Cooperative Management Agreement between the U.S. Dept of the Interior, National Park Service, Gateway National Recreation Area and The City of New York, 2012. www.nycgovparks.org

⁷¹ *Ibid.*

⁷² Deferred Maintenance is defined as putting off or postponing maintenance on a building in order to save costs and meet budget goals.

⁷³ Jen Nersesian, “The National Park Service and Hurricane Sandy,” telephone interview by author, February 26, 2020.

The co-management agreement allowed the National Park Service to then begin the process of restoration on the long-vacant bathhouse and other important public and cultural resources while having support from the city to begin drawing revenue through the reactivation and occupation of their resources. Previous Superintendent, Linda Canzenelli stated during a 2012 New York Times interview “ ‘We’re really good at preserving natural resources and protecting wildlife and historic structures,’ she said, ‘but most people don’t get into the park service because they have a great business sense.’ ”⁷⁴ Just after the agreement was signed and as Gateway continued to search for vendors and additional partnered programming to enhance the beaches of Rockway, Hurricane Sandy battered the park and its resources catalyzing an unforeseen wave of restoration, preservation and resource development.

In addition to co-management, each agency governs the land under their jurisdiction with their respective employees and pre-existing protocol and management strategies. So, the recovery responses including the policies and initiatives under review in this study derive from different sets of priorities and therefore dictate recovery processes that reflect them. Tensions exist between NPS’s mission to enhance communities and heritage through historic preservation and the City’s concerns with housing and economic security in addition to public resources. These variances led to the production of post-Sandy policy and plans that do not mutually target an all-inclusive set of resources and instead prioritize similar outcomes of recovery through different methods.

The New York State Historic Preservation Office (SHPO) also plays a role in the management of historic resources in New York City. SHPO is responsible for the allocation of

⁷⁴ Foderaro, Lisa W. “A Promise Unfulfilled at an Art Deco Bathhouse in the Rockaways.” The New York Times. The New York Times, August 22, 2012.

funding for buildings designated in the National Register of Historic Places and to initiate the Section 106 process, discussed in section VI, for projects that may adversely impact nationally designated buildings. For the purpose of this study their role in the responsive policies after Hurricane Sandy is not analyzed as there are very few nationally designated properties on the peninsula that are not under management of the National Park Service. Limited information is available on their activity in the Rockaways after Sandy and therefore does not contribute to the conclusions of this study.

VI. THE NATIONAL PARK SERVICE IN RESPONSE TO HURRICANE SANDY

Within the first days after Hurricane Sandy, recovery efforts around New York City began. The Rockaways in particular saw a rush of activity to begin pooling resources and removing debris. Because Gateway is a National Park all undertakings require Section 106 Review under the National Historic Preservation Act of 1966.⁷⁵ In response to Hurricane Sandy a programmatic agreement initiated by the National Park Service directly addressed the use of a Historic Preservation Recovery Fund on impacted cultural resources after the storm. The agreement, between NPS, and the SHPO's of 10 impacted states in the Northeast region⁷⁶ as well as multiple Native American Tribes, sets up a system navigating the terms and procedures for storm recovery related undertakings.

⁷⁵ Section 106 of the Federal Historic Preservation Act of 1966 requires that a specific review process be initiated when the use of the government funds on any given project to address potential adverse effects on properties in, or eligible for the National Register of Historic Places. This includes properties that may be directly, or indirectly adversely effected by such projects. United States of America, Section 106 of the National Historic Preservation Act of 1966. <https://www.fema.gov/media-library/assets/documents/12524>

⁷⁶ New York, Connecticut, Rhode Island, New Jersey, Massachusetts, Pennsylvania, Delaware, Maryland, Maine, New Hampshire

Section 106 requires only a conversation to set up a system of guidelines relating to potential adverse effect on historic resources (on or eligible for the national register) during an undertaking. The policy is the most powerful federal tool for the protection of cultural resources, but still has considerable weaknesses. Included in the Section 106 process are the government agency funding the undertaking, property owners, developers, consultants, public stakeholders and any other parties involved.⁷⁷ The system provides a forum for policy negotiations between all stakeholders to alter agreements and language so that all parties can proceed with the project in a way that is mutually beneficial. This type of conversation and compromise also serves as a model for a communicative system that incorporates the desires of all actors while attempting to protect the integrity of the historic environment.

National Register protection is important for resources but all it guarantees is a conversation under Section 106 procedure of the National Historic Preservation Act to negate potential adverse effects on historic resources. (Local designation protected under a municipal ordinance typically guarantees higher levels of protection including a maintenance clause and prevention of demolition, which is the case with NYC Landmarks Law).⁷⁸ It is unique in that it directly targets historic preservation and facilitates active discourse and compromise surrounding decision making for development. In the case of Hurricane Sandy, the Section 106 process proved particularly useful. The process resulted in a programmatic agreement pertaining to any storm recovery projects using federal money that may impact historic resources. Programmatic agreements are designed to define a course of action for all current

⁷⁷ United States, Section 106 of the National Historic Preservation Act of 1966.

⁷⁸ United States of America. New York City. Landmarks Preservation Commission. Chapter 3: Landmarks Preservation Preservation and Historic Districts. [http://library.amlegal.com/nxt/gateway.dll/NewYork/admin/title25landuse/chapter3landmark-spreservationpreservatio?f=templates\\$fn=default.htm\\$3.0\\$vid=amlegal:newyork_ny\\$anc=JD_T25C003](http://library.amlegal.com/nxt/gateway.dll/NewYork/admin/title25landuse/chapter3landmark-spreservationpreservatio?f=templates$fn=default.htm$3.0$vid=amlegal:newyork_ny$anc=JD_T25C003).

and future undertakings in projects that have an unknown and extended timeline and are subject to change, such as multi-stage developments or in this case, response to natural disaster. The programmatic agreement for Hurricane Sandy was developed over the months following the storm in early 2013 and finally signed by all parties in the summer of 2014.⁷⁹ The tail ends of recovery projects are still in effect presently in 2020, seven years after the storm.⁸⁰

While the National Park Service was the initiator of the Programmatic Agreement, the State Historic Preservation Offices (SHPO) are the primary responders when undertakings occur. They also have the power to allocate the HPRF funds to individual projects.⁸¹ SHPO jurisdiction is divided by borough within New York City. Their role is to manage state parks and historic sites and regulate the Section 106 process for buildings on the National Register. One particular section of the SHPO office is in charge of the borough of Queens⁸² and therefore would be the division to allocate funding to affected properties on the National Register after Hurricane Sandy. In the Rockaways, there are very few properties designated on the national register. Legal designation is needed to invoke protection from many preservation and cultural resource policies. This limitation is not a reflection on the effectiveness of the policies themselves but, is a critique on the lack of formally recognized historic resources on the peninsula. Without such formal recognition, the fabric and communities that are connected to it are at a disadvantage as they do not have access to the benefits offered by the programmatic agreements and Section 106 review.

⁷⁹ NPS Programmatic Agreement, 2013.

⁸⁰ Jen Nersesian, Interview.

⁸¹ "Parks, Recreation and Historic Preservation." State Historic Preservation Office - NYS Parks, Recreation & Historic Preservation. Accessed April 30, 2020. <https://parks.ny.gov/shpo/>.

⁸² *Ibid.*

An interview with Jen Nersesian, current superintendent of Gateway, revealed the nuances of the recovery process. Her commentary provides insight into the decision making process after Sandy, the prioritization of activation within the park, and the allocation of funding. Within Gateway National Recreation Area, NPS responses to Hurricane Sandy were effective on historic fabric. The antecedent survey previously allowed expedited decision making for recovery priority. However, the funding and support provided for Gateway went primarily to the conservation and rehabilitation of the historic fabric within the park. Preexisting issues with the ratio of fabric to manpower within the park service allowed an accelerated physical recovery. NPS has an exorbitant amount of fabric to manage within Gateway but did not have the staff to provide stewardship.⁸³ They still do not have the amount of staff necessary to fully program all of their extant structures.

The most notable historic preservation project that came out of the Hurricane Sandy recovery process in Gateway is the preservation of the Jacob Riis Bathhouse. The 1932 bathhouse (figure 21) has been the focal point of Riis Park since its construction. In 1937, Robert Moses led a renovation of the park that altered the beach facing façade of the bathhouse and added a parking lot and boardwalk to the site, all of which are still in existence today.⁸⁴ The bathhouse became a national historic landmark in 1981. In 1988 the bathhouse was closed to the public due to the discovery of asbestos resulting in the beginning of restoration work in the 1990s. A symbol of community gathering and a major architectural icon in the Rockaways, the restoration of the bathhouse is an essential step toward providing additional public

⁸³ Jen Nersesian, Interview.

⁸⁴ "Beyond the Village and Back - Jacob Riis Park's Art Deco Bathhouse - GVSHP | Preservation | Off the Grid," GVSHP, May 08, 2018, , accessed April 21, 2019, <https://gvshp.org/blog/2018/05/08/beyond-the-village-and-back-jacob-riis-parks-art-deco-bathhouse/>.

programming for both Rockaway and inner city residents. Recovery funding only provided support for the building's physical rehabilitation and the Park Service was left to reactivate it with their already limited staff capacity.

The wake of Hurricane Sandy gave Gateway the opportunity for a fresh start in light of previous public criticism regarding limited funding and resources. In other words, a chance to demonstrate NPS's ability to be a positive force for community resilience? A description in the New York Times five years before Sandy states: " 'New habitats, restored marshes and modern recreation facilities are needed to create an environment that is suitable for park visitors, native wildlife and plants.' " ⁸⁵ But this was not quickly or easily realized. After Sandy, the Hurricane Sandy Recovery Fund created by the Department of the Interior ⁸⁶ provided the funding needed to complete the previously abandoned restoration work needed for the bathhouse to once again become a functional asset to Riis Park.

During the months immediately following the storm the Riis Park parking lot was used as a temporary dumping ground for the exorbitant amount of debris from all around the peninsula (figure 23). Recovery teams spent months filtering all of the sand up and down the coastline using industrial sized sifters. ⁸⁷ With such a broad scope of work to be done and a total of \$180 million dollars of damage in Gateway alone, ⁸⁸ initial efforts to clear the beaches, assess and stabilize the structures in the park were geared toward ensuring that the park would be

⁸⁵ "Rescuing Gateway," The New York Times, December 30, 2007, , accessed April 21, 2019, https://www.nytimes.com/2007/12/30/opinion/nyregionopinions/Llgateway.html?_r=0.

⁸⁶ "Hurricane Sandy Recovery," U.S. Department of the Interior, October 26, 2018, , accessed April 21, 2019, <https://www.doi.gov/hurricanesandy>

⁸⁷ Lisa W. Foderaro, "After Hurricane Sandy, Cleaning Up Sand and Returning It to Beaches," The New York Times, October 19, 2018, , accessed April 21, 2019, <https://www.nytimes.com/2013/01/10/nyregion/after-hurricane-sandy-cleaning-up-sand-and-returning-it-to-beaches.html>.

⁸⁸ "A Tale of Two Ponds: NYC Park After the Storm," National Geographic, May 17, 2016.

open for the summer season, only eight months after the storm. Full recovery was not possible in such a short period of time but, despite the missing boardwalk and other wreckage, The Park Service pushed on to make sure the beaches were open and safe.⁸⁹ Prioritization of opening the beaches in lieu of the incomplete recovery efforts portrays the intersection between the necessity for public use of the park and the excessive stress that heavy public use puts on the natural and built environments. Cleaning the beaches was an exemplary cultural resource preservation effort. Quick clean up and recovery restored access to the beach for public recreation which directly addressed high public demand for open space and activity.

The bathhouse restoration acts as a model for achieving community resiliency at the scale of the landmark building. Through extensive restoration, the primary mode of integrated storm resilience in the bathhouse was to permanently open doorways on both sides of the structure so that during storm surges and flooding, water will flow through the courtyard of the building and out the other side decreasing the chance of water retention and resulting in less potential damage to the masonry foundation. Additionally, NPS put new development criteria in place for all development projects with anticipation of increased frequency and intensity of storms in the future. Cultural Resilience guidelines were created by the Park Service which Gateway abided by. These guidelines included resilience measures for systems, finishes and construction including the permeability of the back wall of the bathhouse and waterproof finishes.⁹⁰ Figures 24-26 show the Improvements to the bathhouse and the results of the restoration work today.

⁸⁹ *Ibid.*

⁹⁰ Jen Nersesian, Interview.

The bathhouse not only achieved resilience through the preservation of its fabric but also in its programming. The long awaited completion of the completed rehabilitation then catalyzed the National Park Service to create an RFP for commercial occupancy released in early 2016. Public programming was always the intent for the use of the bathhouse, but with limited capacity the park service used the RFP to find a private tenant with the resources to establish substantial and attractive programming. This partnership takes pressure off the park service to occupy and manage the entire space. To address issues of resilience in conjunction with the need for improved beach amenities and public programming, the RFP required that proposals be responsive to the diverse crowds, unique site and also provide a flood plan for interior functions.⁹¹ Efforts to rehabilitate and occupy the bathhouse and increase visitation to Gateway and Riis Park in particular were in play before Sandy hit New York City. Funding generated through recovery and the rush to reopen the park expedited the process.

The winner of the RFP, announced in 2017, was the Brooklyn Bazaar an event space in north Brooklyn that hosts parties, concerts, fairs, movies and other community events.⁹² The Bazaar previously hosted pop up programming and vendors at Riis Park during summers prior to Sandy, but the RFP gave them the opportunity to optimize their occupation of the space. NPS is currently in a lease negotiation with the now named, Riis Beach Bazaar with a \$30 million investment from the developer. New programming and amenities will include a boutique hotel,

⁹¹ Request for Proposals: Jacob Riis Park, Request for Proposals: Jacob Riis Park § (2016).

⁹² "Brooklyn Bazaar." Brooklyn Bazaar | 150 Greenpoint Ave. Accessed April 30, 2020. <https://bkbazaar.com/>.

event and food space.⁹³ New Yorkers greeted the announcement with excitement for the long awaited activation of the building.⁹⁴

Since 2017, the park has seen increased flooding from storms and the measures taken have been successful in protecting the park's resources. According to Jen Nersesian, they "made investment in the building knowing that it wouldn't be fully inhabited and used so that it could be safe through the next storm."⁹⁵ The steps taken to increase the resilience of this part of Gateway both prior to, and after Sandy appear to be effective in terms of physical resilience. NPS's diligent survey of extant resources within Gateway fortunately set them up for streamlined decision making post Hurricane Sandy. The decision to prioritize the activation of the neglected bathhouse and surrounding fabric targeted both the physical and community oriented resilience of the park. Hurricane Sandy had silver linings. Some of the projects completed may have taken decades otherwise and gave NPS the ability to rebuild smarter and better.⁹⁶

Despite the access to large amounts of recovery funding, Jen Nersesian describes operational funding at Gateway as flat.⁹⁷ Disproportionate allocation of funding hinders the park service's ability to optimize their services as there is no increase in programming or in the ability to serve more visitors. NPS has partnerships with other organizations to train and work with the partners and their staff who provide an increase in programming for the park. However, visitation at Riis Park Fort Tilden is skyrocketing [timeframe??]. Although management is trying

⁹³ Jen Nersesian, Interview.

⁹⁴ Will Gleason, "Riis Park's Historic Art Deco Bathhouse Is Getting a Major Upgrade," Time Out New York, June 27, 2018, , accessed April 21, 2019, <https://www.timeout.com/newyork/news/riis-parks-historic-art-deco-bathhouse-is-getting-a-major-upgrade-062718>.

⁹⁵ Jen Nersesian, Interview.

⁹⁶ *Ibid.*

⁹⁷ *Ibid.*

to shift resources to where the people are and where the resources are most needed, “the pie is still the same size.”⁹⁸ In light of this situation, the park service is still trying to maintain their current services and programming while creating more partnership with other organizations that can provide programming. Public-private partnerships are a productive tool to improve under-resourced public spaces with private money. Currently, NPS is finalizing their lease with Brooklyn Bazaar for their occupancy of the bath house and continuing to provide physical maintenance for their buildings and landscapes and basic park services. The increase in visitation is perpetuated by the improvements to the landscape and infrastructure in Gateway. Without increased support for programming and manpower the growth at Gateway is progressing in an unsustainable way.

Short term interventions and the quick action of NPS to establish Section 106 programmatic agreements provided a strong base for physical recovery and community resilience. The RFP perpetuated these efforts by expediting the use of private capital to support the reactivation of cultural resources for public benefit. Just eight years after the storm, Gateway is in better shape than it ever was before. But, as money is disproportionately poured into the conservation of the landscape and extant fabric neglecting the staff and programming support for the occupation of the park, long term resilience becomes a concern. As the park continues to boom and rising levels of visitors from all over the city migrate to the Rockaway shore each summer which is an integral part of the Rockaway’s heritage. How will this affect the pressure put on Park staff? How will this impact extant communities from the eastern end of the peninsula?

While the resilience of the physical resources appears to be strengthened by post Sandy federal intervention and policy, community resilience may be compromised. As local tourism

⁹⁸ *Ibid.*

reaches all-time highs, NPS strategically uses their partnership with the city and other organizations to outsource private funding and external programming. However, a lack of public programming may cause support for local communities affected by deeply rooted sources of inequity on the Rockaway Peninsula to be further swept under the rug as seen in the eastern commercial and residential neighborhoods of Rockaway. NPS policy and intervention provides excellent support for cultural resources. The same amount of consideration for historic fabric and cultural resource management needs to be adapted by local governance for the entire peninsula to develop in a manner that is both physically and socially resilient.

VII. UNITED STATES ARMY CORPS OF ENGINEERS PLAN

The United States Army Corps of Engineers (USACE) is the primary federal unit that is responsible for flood protection and waterway interventions. In the case of the Rockaways, USACE originally started a mitigation plan to protect the peninsula in between the 1960s and the 1970s called the Beach Erosion Control and Hurricane Protection Program.⁹⁹ However, the plan was never completed or put into effect due to a lack of funding. Abandonment of the project parallels the other acts of neglect to the region around the same time period including the prolonged vacancy of Jacob Riis Bathhouse, swaths of undeveloped land in Far Rockway¹⁰⁰, and the disinvestment in public infrastructure and amenities. After Hurricane Sandy, USACE was tasked with the responsibility of focusing on coastal resilience in NYC with the overarching goal

⁹⁹ Public Information Meeting, East Rockaway to Rockaway Inlet and Jamaica Bay Reformulation Study, US Army Corps of Engineers, New York District, 2015.

¹⁰⁰ Callahan, *Bungalows of Far Rockway*.

of long-term sustainability for the region.¹⁰¹ Immediately after the storm and continuously since, they were responsible for importing millions of cubic yards of sand to replenish the eroding Rockaway beaches.¹⁰² In addition to this short term solution they began developing a new resilience plan targeting the Atlantic coastline of the peninsula and the Jamaica Bay inlet. The revised plan was finalized and published in 2016.

Titled, *Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay: Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement*, the lengthy document covers all aspects of the environmental conditions of the peninsula, the effects of Sandy and proposed mitigations. Through “five principal planning objectives” outcomes are expected to be achieved between 2020 and 2070.¹⁰³ The principals are:

1. Reduce vulnerability to storm water impacts;
2. Reduce future flood risk in ways that will support the long-term sustainability of the coastal ecosystem and communities;
3. Reduce the economic costs and risks associated with large-scale flood and storm events;
4. Improve community resiliency, including infrastructure and service recovery from storm effects; and
5. Enhance natural storm surge buffers, also known as natural and nature-based features (NNBFs), and improve coastal resilience.¹⁰⁴

Major interventions proposed to achieve these principals are proposed in a tentative master plan seen in figure 29. The report thoroughly describes the environmental and cultural

¹⁰¹ *Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay: Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement*. United States Army Corps of Engineers, n.d. § (2016).

¹⁰² Foderaro, Lisa W. “Before Rebuilding Beaches, Plucking Debris From Storm-Tossed Sand.” *The New York Times*. The New York Times, January 10, 2013. <https://www.nytimes.com/2013/01/10/nyregion/after-hurricane-sandy-cleaning-up-sand-and-returning-it-to-beaches.html>.

¹⁰³ *Ibid*.

¹⁰⁴ *Ibid*, iv.

resources located in the impacted region as well as a projection of future conditions on the site without the proposed interventions. The proposal includes both structural and non-structural interventions. Structural elements are floodgates, hurricane barriers, levees, floodwalls, seawalls, and breakwater. Nonstructural proposals include retrofits, floodplain zoning and new flood warning systems (figure 31).¹⁰⁵

All the interventions primarily attempt to mitigate extraordinary flooding like during Hurricane Sandy, which may be exacerbated in future storms due to rising sea levels. A diagram in figure 32 shows a section plan of a seawall proposed for construction on the Atlantic shoreline. Additionally, a cost analysis reveals the net savings on storm damage costs with the interventions but also that the entire project “would cost about \$4 billion, a hefty price that many observers believe leaves the plan’s future in doubt.”¹⁰⁶ Exorbitant costs required to see the project through in its entirety is cause for uncertainty. The last plan was never completed due to unavailability of funding. Will the impacts of Sandy resonate strongly enough to ensure that monetary support for USACE initiatives in this region do not run out?

Along the 50 year timeline, USACE plans are the most elongated out of all the policies analyzed in this study. Acknowledging that long-term resilience plans may require a lengthy timeline for implementation, USACE is realistic about the extended process required to tackle such a substantial set of interventions. Time and effort required ensures that the mitigations will be robust and ultimately effective in protecting the southern shoreline of New York City. However, the proposed 50 year timeline is not congruent with the city’s current timeline for new development seen in the re-zoning proposal and the park service’s recent improvements to

¹⁰⁵ *Ibid*, 82.

¹⁰⁶ Ferré-sadurní, “Could the Rockaways Survive Another Sandy?”

accommodate increased visitation in the Rockaways. Although the USACE's plans are well thought out and present promising outcomes of coastal resilience there is once again a level of disconnect between their plans and those of other agencies and communities.

USACE is actively in communication with NPS and NYC Parks and Rec regarding the planning and initial stages of the project. Superintendent Nersesian included in the interview that none of their interventions actually intervene with park land.¹⁰⁷ But nonetheless, constant consultation is required to ensure that the cultural resources that are a part of the park are not adversely impacted. Before the project began a NEPA enforces Environmental Impact Statement¹⁰⁸ demonstrated that the project would have no adverse impacts on the natural environment as well. Despite active contact between the agencies, the timeline discrepancy between all the different projects they are leading poses risks to the peninsula. If new development—led by the city in particular—continues at an expedited rate in pursuit of economic recovery and higher population capacity, USACE interventions will not yet be fully implemented to combat against another mega-storm. In the case of the integrate management plan, USACE's sole focus on the physical and environmental resilience as opposed to community based resilience is justified. Their position as the middle-ground between NPS and the city still requires more cohesive communication that may be more productive if all three bodies were to meet simultaneously instead of just one on one.

¹⁰⁷ Jen Nersesian, Interview.

¹⁰⁸ Federal Energy Regulatory Commission, "Draft Environmental Impact Statement on the Rockaway Delivery Lateral and Northeast Connector Projects", October 4, 2013.
<https://www.ferc.gov/industries/gas/enviro/eis/2013/10-04-13-eis.asp>

VIII. NEW YORK CITY IN RESPONSE TO HURRICANE SANDY

The New York City Government plays an important role in the Hurricane Sandy recovery process, the tale end of which is still happening today. In regard to the Rockaways, this section will address the Special Initiative for Rebuilding and Resilience (SIRR) under the Bloomberg administration, the 2017 Rockaway Re-Zoning Resolution along with a few other varied city-led initiatives and finally the role of the New York City Landmarks Preservation Commission. The discussion will analyze whether these policies advance community resiliency or work against it.

Immediately after Hurricane Sandy, The City of New York initiated city-wide emergency response plans and began the recovery process. In the Rockaways, emergency workers and volunteers worked tirelessly to remove the extensive debris and begin the rebuilding process. Response in Gateway was primarily streamlined through NPS. As the eastern half of the peninsula is managed primarily by the city, there were many actors influencing the recovery process. Recovery and planning derived from combined efforts of The Mayor's Office, The Department of Buildings (DOB), The Department of City Planning, and many other agencies whose services are required to push forward civic improvements. Combined with the expedited boardwalk reconstruction project, public policy and city-led initiatives jumpstarted vast physical and economic recovery on the peninsula. The rapid improvements may create a resilient beach and built environment but will simultaneously catalyze unsustainable changes to the social fabric of the Rockway communities.

New York City established a range of policies and recovery programs to aid residents after Hurricane Sandy. Major categories of assistance include housing, infrastructure, business assistance and available recovery funding.¹⁰⁹ Cultural resources are not explicitly targeted in

¹⁰⁹ NYC Recovery. Accessed April 30, 2020. <https://www1.nyc.gov/site/recovery/index.page>.

these initiatives nor is the mention of the historic build environment. Build it Back is the housing program that helped to elevate tens of thousands of homes above the flood plain in coastal neighborhoods around the city.¹¹⁰ Other initiatives like business assistance are built into broader long term city-led initiatives. OneNYC 2050¹¹¹ is Mayor DeBlasio's nine-volume masterplan for the future of the city that provides public services and economic support for its residents. To protect and improve the built environment, the city designed multiple programs to combat climate change and increase resilience in the built environment. Most notable are the Climate Resilience Guidelines¹¹² which provide developers, architects and engineers the tools they need to produce thoughtful and responsive new construction. These design guidelines only address new construction, lacking a component that specifically advises on the treatment of extant and historic structures.

With a spectrum of recovery initiatives in place to assist New Yorkers and the built environment, the test of their effectiveness is how well they are able to reach the members of the population most in need of their services. Often, communities rely on local organizations to educate and assist residents with accessing these public programs, as they may not have the resources to do so on their own. For the purpose of this study, the policies chosen out of the spectrum of city-led recovery policies most directly impact the study area of the Rockaways. These other, broader initiatives have the ability to aid the Rockaways and the region's cultural resources but, their scope of impact is too broad at the city-wide scale to fully understand the specific impacts on this one, particularly vulnerable region.

¹¹⁰ *Ibid.*

¹¹¹ "The Plan for a Strong and Just City." OneNYC 2050, <http://onenyc.cityofnewyork.us/>.

¹¹² "Climate Resiliency Guidelines." City of New York, Mayor's Office of Resiliency and Climate Change, 2019.

VIII.1 Special Initiative for Rebuilding and Resiliency

In 2013, the SIRR report, titled “A Stronger More Resilient New York” was published by the Bloomberg Administration. The lengthy document addresses the extent of damage and all aspects of infrastructure and systems in the built environment. The section of most relevance to the Rockaway peninsula is the South Queens Community Rebuilding and Resilience Plan.¹¹³ A breakdown of demographics describes statistics on neighborhoods which are primarily residential, as well as homeownership rates, employment rates, and a list of commercial activity.¹¹⁴ The description of neighborhood character and building types alludes to the greater historical trends contracts the development described earlier. The peninsula is characterized by detached 1-2 family homes or high rise apartment complexes.

As acknowledged in the report socio-economic traits vary greatly by neighborhood. Wealthier neighborhoods of Arverne, Edgemere and Bell Harbor are juxtaposed to the housing developments and lower income areas in Far Rockaway, Rockaway and Broad Channel.¹¹⁵ “The Rockaways' vast income disparities make it even more difficult for people living in affordable housing on the peninsula. The affluence of the peninsula's west end brings up the area median income (AMI) of the entire peninsula, which increases the rents for people on the east end.”¹¹⁶ In addition to the economic inequities the region is also physically vulnerable as “78 percent of the residential buildings in the area were constructed prior to 1961, when modern construction

¹¹³ “A Stronger More Resilient New York,” Chapter 13.

¹¹⁴ The primary industry in the Rockaways is healthcare. This includes many medical offices as well as care for senior residents.

¹¹⁵ “A Stronger More Resilient New York,” 306.

¹¹⁶ Erdos, “Hurricane Sandy and the Inequalities of Resilience in New York.”

standards were adopted. These buildings ('combustible structures'; in the City's nomenclature) tend to be constructed of lighter structural components such as wood."¹¹⁷

The report acknowledges the vulnerability of the region, particularly in the bayside neighborhoods of the Rockaways, and indeed residents experienced detrimental flooding and storm damage for years prior to Hurricane Sandy. An article from the American Prospect discusses the long endured flooding and storm hazards often overlooked by the city. Plans to raise the grade of the roads and sidewalks by three feet was tossed around but never implemented.¹¹⁸ Residents of the weathered bayside neighborhoods feel neglected by the city as their homes continue to endure the effects of climate change with little attempt at mitigation.¹¹⁹ Although the proposed raise in grade was well intentioned, the plan did not appear to incorporate details about the effects that such modifications would have on extant buildings, leaving residents continuously discouraged about the future of their homes.¹²⁰ After Sandy, the bayside neighborhoods experienced some of the most destructive damage. It took this catastrophic event for the city to put forth mitigation plans for the region through The SIRR.

The SIRR proposed a list of priorities to initiate recovery in South Queens and increase resilience. Emergency sand replenishment, updated building codes, retrofitting extant structures, re-zoning, and guidelines for new developments.¹²¹ "Subject to available funding, the City, [proposed to] launch a program to raise bulkheads and other shoreline structures across the five boroughs in low-lying areas most at risk of daily or weekly tidal flooding."¹²² Other than

¹¹⁷ "A Stronger More Resilient New York," 306.

¹¹⁸ Erdos, "Hurricane Sandy and the Inequalities of Resilience."

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*

¹²¹ "A Stronger More Resilient New York," 311-322.

¹²² *Ibid.*, 322.

these building and construction related initiatives, the city left a majority of the environmental interventions to be planned and implemented by the United States Army Corp of Engineers. Aforementioned in Section VI, Hurricane Sandy, DOB's survey and labeling of affected properties determined the physical condition of buildings but does not put forth action plans or solutions, nor does any other city agency. This missing guidance denies owners and managing agencies information needed to make decisions for their buildings determinant upon age, building material, architectural or social significance of the structure. Lack of action oriented tools such as resources to link owners with firms who specialize in historic building construction, or a set of climate change and disaster preparedness guidelines for individuals and buildings hinders the ability for communities and individual properties to recovery in a sustainable way.

All the proposed interventions magnify long-existing disparities in the spatial division of recovery investment by NYC which will not lead to community resilience. Instead, the interventions will exclusively benefit the well-off population of the Rockaways and seasonal visitors. Beachfront recovery is the frontline of the proposals which prioritizes seasonal summer recreation industry and economy perpetuating the neglect in many residential communities. There have been almost no improvements to the bayside of the peninsula since the Hurricane,¹²³ as money continues to funnel into optimizing the oceanfront beaches and adjacent property. Unequal dispersal of funding and amenities is not a new phenomenon in the Rockaways. Historically, the Atlantic facing beaches received more attention and protection harking to the pre-civil rights era when the oceanfront was reserved for whites only, while the

¹²³ Luis Ferré-Sadurní. "Could the Rockaways Survive Another Sandy?" The New York Times. The New York Times, July 13, 2017. <https://www.nytimes.com/2017/07/13/nyregion/rockaways-beaches-hurricane-sandy.html>.

majority of the black and communities resided on the bay side and in Far Rockaway.¹²⁴ This trend was perpetuated by urban renewal when low-income residents and communities of color were displaced to new public housing constructed on the peninsula. Today, “communities continue to be largely segregated, with Hispanics and African Americans mostly living on the eastern end of the peninsula.”¹²⁵

In the Rockaways, under-resourced communities are the most in need of public assets and programming as well as opportunities for city recovery assistance. City-led investment in public resources in the Rockaways aims to generate private investment in residential and commercial property. This phenomenon highlights a broader point about municipalities reliance on private capital to perpetuate and increase support within local economies. A majority of disaster relief funding provided by FEMA goes directly to state and local governments through the Public Assistance Grant Program (PAGP). Financial aid from the PAGP funds emergency post disaster efforts including debris removal, safety and infrastructure restoration.¹²⁶ FEMA also provides financial assistance to individual homeowners and residents in disaster stricken areas. With recovery money funneling into both the public and private sectors, local governments—that are already lacking financial resources— may be tempted to use their normal budgets to invest in capital improvements in disaster stricken areas that will make real estate more appealing to private sector investors. To achieve this, the city funnels money into building an attractive urban platform for potential investors in order to jumpstart the development market and expedite economic recovery. This process often results in neglect and risk of demolition for

¹²⁴ Erdos, “Hurricane Sandy and the Inequalities of Resilience in New York.”

¹²⁵ *Ibid.*

¹²⁶ “Public Assistance: Local, State, Tribal and Private Non-Profit.” Public Assistance: Local, State, Tribal and Private Non-Profit | FEMA.gov. Accessed May 1, 2020. <https://www.fema.gov/public-assistance-local-state-tribal-and-non-profit>.

undesigned historic fabric in the historic built environment, as poorly maintained older properties are vulnerable to demolition in order to make way for new development.

VIII.2 Rebuilding the Rockaway Boardwalk: A Symbol of Resilience?

In the Rockaways, the beaches served as the attraction for commercial and residential tenants to invest in the waterfront landscape and perpetuate the seasonal economy. Enormous push for the beaches to open again by Memorial Day emphasizes the prioritization placed on the rehabilitation of the beachfront and its amenities. Mirrored in the attempts made by NPS at Riis Park and Fort Tilden, the city's first line of action to was to "replace approximately 3.6 million cubic yards of sand. This project expected to start in July 2013, with completion targeted for December 2013"¹²⁷ was accompanied by the re construction of the historically significant boardwalk. As a cultural asset, the boardwalk was an important element to target during recovery in the Rockaways. However, the rebuilding process did not incorporate the identification or consideration of other cultural resources in the surrounding neighborhoods, reinforcing a lack of inclusive resilience planning. As a part of an inclusive recovery process rebuilding of local neighborhoods and public transportation needed to match the timeline of boardwalk completion to be able to accommodate the summer crowds drawn to the beaches by the completion of the boardwalk.

As the Rockaways scrambled to resume a state of normalcy after Hurricane Sandy, the recovery of public assets took precedence. These plans "left the city's Department of Parks and Recreation with a seemingly impossible deadline: preparing the beach to open by Memorial Day weekend.... And yet the beach remains an engine of commerce, and a symbol of New York's

¹²⁷ *Ibid*, 319.

determination to bounce back.”¹²⁸ Such an undertaking required that two years of restoration work be minimized to four months. To make a safe and productive reopening happen, “city officials decided to take the three major parks buildings — at Beach 86th, Beach 97th and Beach 106th Streets — and create ‘islands,’ or main entry points to the beach, with renovated concessions, updated bathrooms and roomy new plazas under sleek shade structures.”¹²⁹

Construction teams and project leaders worked around the clock for a successful and timely completion. The beaches are presumably the most significant cultural resource on the peninsula, and politicians and city employees agreed that expediting the opening was a necessity for the livelihood of New Yorkers, both at large and Rockaway locals. The Department of Parks and Recreation was given the brunt of the work to manage the recovery process for the highly valued public assets on the peninsula. Rush recovery expedited the preservation of the beaches and its historic buildings. However, as historic preservation is not at the forefront of DPR’s mission their interventions and recovery processes overlooked the inclusion of cultural resource management.

Current Parks and Rec Rockaway Administrator, Eric Peterson, addressed in an interview with the author the challenging task of storm preparedness and resilience efforts on the peninsula. According to Peterson, the notion of needing to be more resilient has come into all facility decisions in some way, especially recently. Certain priorities lie in raising grades, and making sure new facilities are above the flood plain. Such efforts are essentially a “moving target” because the scale of the project is so large, and the projected lines of the flood plain are constantly shifting. Constant fluctuation in flood plain predictions makes estimating and

¹²⁸ Federaro, “Racing the Clock in the Rockaways.”

¹²⁹ *Ibid.*

planning for storm mitigation projects quite challenging. For example, as the boardwalk was built in segments some parts are higher than others because of the change in approach over the course of the project development.¹³⁰ The example enforces that climate change is not a static process. As it evolves, managing agencies need to constantly adapt their recovery processes and timelines to keep up.

Parks and Rec's physical resilience plan for the Rockaways is in five phase plan which targets, groins, dunes, and bay side protection. Peterson acknowledges that the physical interventions are important but that it is beneficial to wait to begin implementation as the beach season cannot be put on hold. It will be easier to get started when there aren't hundreds of thousands of swimmers and over 300 lifeguards.¹³¹ Addressing the bay side, Peterson expressed the challenges of working in an area with many private owners while parks has only a bit of property there. DOT and the Transportation Authority also have a stake there, as well as DOE and DPE for schools and plumbing, sewage and infrastructure. Power plants also located in this section.¹³² Understanding those parameters, the overlap and intersecting priorities of all the governing actors in this specific region of the Rockway peninsula poses difficulty in creating a unified approach to resilience. As each of these agencies has different interests and intentions at the forefront of their civic responsibilities, approaching the management of the preservation of cultural resources and public amenities is hard to do. To Peterson, the ethics of the recovery process are important, but effects will not be known immediately – as time passes, they'll see if

¹³⁰ Eric Peterson, Interview.

¹³¹ *Ibid.*

¹³² *Ibid.*

their interventions are working and whether they have any unforeseen effects on wildlife and communities.¹³³

The SIRR was created under the Bloomberg Administration but, in November 2013, just a year after the storm, Bill DeBlasio was elected Mayor of New York City. He assumed the ongoing responsibility of storm recovery. With the change in administration came a new trajectory for storm recovery, one that is still being implemented today. The SIRR was still upheld but under a newly created department in the Mayor's office called the Office of Recovery and Resiliency. New priorities took effect with the creation of the new office, most prominent was the initiative to allocate \$100 million dollars to aid private homeowners whose properties were destroyed during the storm.¹³⁴ Some of his priorities appear to mirror those of the Bloomberg Administration as he continued to pour money into beach front restoration, the completion of the boardwalk, and the re-zoning of five neighborhoods in the Rockaways.

Upon completion of the boardwalk in May of 2017, Bill DeBlasio declared that "The millions who come to the boardwalk by bus, bike and ferry will see the Rockaways' resilience and vibrancy in action. This boardwalk is proof of our commitment to building back stronger and better."¹³⁵ The new boardwalk, with a reinforced concrete deck is elevated on steel pipes and protected by other systems such as dunes and a concrete retaining wall to keep sand from infiltrating the adjacent communities. Complete with ADA access points, a bike lane and brightly colored motifs, the boardwalk is an inviting asset and a massive construction feat post Hurricane

¹³³ *Ibid.*

¹³⁴ Colvin, Jill. "De Blasio Appoints His Sandy Recovery Team." Observer. Observer, March 29, 2014. <https://observer.com/2014/03/de-blasio-appoints-his-sandy-recovery-team/>.

¹³⁵ "Resilient Rockaway Boardwalk Completed in Time for Memorial Day Weekend." QNS.com. <https://qns.com/story/2017/05/26/resilient-rockaway-boardwalk-completed-in-time-for-memorial-day-weekend/>.

Sandy (figure 28). While this may address some aspects of resilience, it falls well short of a comprehensive community resilience strategy.

The completion of the project marks a milestone for the peninsula after the devastation of the storm. However, reporting outlets and public officials, including DeBlasio harped on the local economic boost and recovery that the boardwalk would bring to the Rockaways.¹³⁶ The Mayor continuously emphasized the physical nature of the boardwalk as a symbol of resilience as a “barrier wall to protect the communities of the Rockaways.” “It was built to be resilient.”¹³⁷ He declared. Once again, the definition of resilience is confined to the physical realm. Future storms and effects of climate change may not as easily obliterate the built environment, but the impact of the physical improvements and subsequent urban growth on extant communities is left out of the conversation.

VIII.3 Rezoning the Rockaways

In 2017, Re-Zoning the Rockaways was approved and put into effect by the Department of City Planning. The plan re-zones five neighborhoods including Rockaway Park, Rockaway Beach, Sommerville, Edgemere, and two locations in Far Rockaway from west to east respectively. Primary objectives of the initiative include maintaining the low rise building scale in certain areas, providing additional parking for auto-dependent locations, allowing flexibility for residents to enlarge one family homes, increasing provisions for side and front lots as well as

¹³⁶“Mayor De Blasio Previews Final Rebuilt Sections of Rockaway Boardwalk, Set to Open Next Week.” The official website of the City of New York, May 19, 2017. <https://www1.nyc.gov/office-of-the-mayor/news/321-17/mayor-de-blasio-local-officials-preview-final-rebuilt-sections-rockaway-boardwalk-set-to#/0>.

¹³⁷ *Ibid.*

planting strips and to expand the incorporation of mixed use buildings (figure 29).¹³⁸ To achieve these objectives, the principal responses in the chosen neighborhoods include down zoning to decrease overall density and limit medium density construction to smaller areas. Additionally, several commercial overlays were added along selected corridors.¹³⁹

Designed to protect extant structures and new construction from potential impacts of future climate related events and to control density, the initiative still prioritizes the built environment and fails to include consideration of future disparate impacts on neighborhood change. The effects of the zoning changes are dependent on the specificities of each neighborhood in terms of location on the peninsula, demographics, and the extant built environment. Rockaway Park and Rockaway Beach, the most western of the neighborhoods, span between Jamaica bay and the Atlantic coasts and are characterized by low density, semi-detached and detached buildings with some medium density construction as well. Both are generally higher income communities¹⁴⁰ and host local commercial corridors such as Beach 116. Additionally, these areas are lower density and have higher employment rates.¹⁴¹

Proximity to the beaches makes these locations perfect for rental units and local businesses to support the seasonal functions of the peninsula. Down zoning and limiting medium density while adding perpetuates support for 1-2 family structures and their enlargement. Combined with the commercial overlays, the increased proximity to amenities and encouragement of low density dwellings may increase the value of the surrounding properties, triggering capital improvements to homes and increased renter ship in the summer season.

¹³⁸ "Rezoning the Rockaways", 5.

¹³⁹ *Ibid.*

¹⁴⁰ US Census Bureau. "Data." Census.gov. Accessed April 23, 2020. <https://www.census.gov/data//>.

¹⁴¹ *Ibid.*

Rising values are good for the regional real estate market and for local business but heightens overreliance on the seasonal economy that already takes precedent in the sustenance of the Rockway communities. It concurrently increases threats of gentrification and higher income families moving in, leading to a rippling effect on other neighborhoods.

In the Somerville, Edgemere and Far Rockaway neighborhoods, rezoning trends are comparable. Somerville is demographically a higher income neighborhood where the effects of prioritizing low and medium density housing may be similar to Rockaway Park and Rockaway Beach. On the other hand, Edgemere, and Far Rockaway are the highest density areas of the Rockaways as they host the majority of the public housing on the peninsula. These census tracts also have the lowest median incomes and highest unemployment rates.¹⁴² The re-zoning plans mimic those of the other three neighborhoods. Although the new zoning will prevent large scale and out of context development right along the waterfront, it could perpetuate the increase of market value. With high-density and low-income communities, the results of increasing land values will put stress on existing racial and class tensions that exist in the Far Rockaway region.¹⁴³ Wealthy communities such as Arverne by the Sea are juxtaposed with the existing low income communities and public housing units. What was once essentially a wasteland in Far Rockaway is seeing new waves of development radiating from the rise in popularity of the beachfront.

This is the first re-zoning of Far Rockaway since 1961. Proposed changes will bring over three thousand new units to the region, including city-owned affordable housing and improved

¹⁴² *Ibid.*

¹⁴³ Eric Peterson, interview.

streetscapes.¹⁴⁴ As Peterson puts it, “all of this [recent development] will shift the center of gravity on the peninsula.”¹⁴⁵ Major progress is taking shape in response to the re-zoning as a part of DeBlasio’s progressive housing plan.¹⁴⁶ While new construction started on additional housing units and mixed-use complexes in Far Rockaway as well as expedited improvements to infrastructure, primarily stoplights and drainage systems, residents are feeling pressure and inconvenience. The outcomes of the projects will lead to a bolstered economy and safer, more appealing streets but in the meantime rapid construction and constant noise and interference with traffic patterns is frustrating for locals.¹⁴⁷

The outcomes of the re-zoning are marketed well by the Mayor’s office and hired design teams and have had positive impacts on the region. However, they are still perpetuating the long-standing trend around the peninsula of prioritizing economy first, exacerbating the disadvantage among Rockaway communities, and preventing achievement of peninsula-wide community resilience. As noted by Fox-Lent et al in their study of resilience in the Rockaways in order to “develop resilience, performance in all components of the system must be addressed. This differs from the past approach of engineered solutions, which have optimized individual components of system, but the failures of communities in the face of disasters are often due to

¹⁴⁴ Lexi. “Far Rockaway Rezoning: City Council Land Use Committee.” The Real Deal New York, June 4, 2019. <https://therealdeal.com/2017/08/22/city-council-land-use-committee-passes-far-rockaway-rezoning/>.

¹⁴⁵ *Ibid.*

¹⁴⁶ “Your Home NYC.” NYC Housing Plan. <https://www1.nyc.gov/site/housing/index.page>. Mayor DeBlasio’s new housing plan aims to create and preserve over 300,000 affordable housing units around the city. The plan primarily targets “vulnerable” neighborhoods in the outer areas Brooklyn, Queens, Manhattan and the Bronx. These neighborhoods are generally populated by communities of color and low income households, some of which are already feeling the effects of gentrification in rapidly growing NYC housing market.

¹⁴⁷ <https://therealdeal.com/2017/08/22/city-council-land-use-committee-passes-far-rockaway-rezoning/>.

cascading failures due to unidentified dependencies within the system.”¹⁴⁸ Economic recovery is equated with resilience as it provides visible short term results. The city then markets those short term results as a step toward long term resilience but there is failure to expose the intersection between a stimulated economy and the primary groups benefiting from it.

New affordable housing, support for local businesses and increased funding for community based organizations are all results of the re-zoning initiative. With such improvements also come limitations, and continued neglect for certain groups. Housing lottery priority is not guaranteed for residents displaced to shelters by Hurricane Sandy, and local leaders have “not seen any plans for those with disabilities or to bring higher education institutions into the area.”¹⁴⁹ Instead, community based organizations are left with the task of assisting those in need to help them apply for the housing lottery and to continue to seek help from public programs.¹⁵⁰ Increasing density and improving streets and storefronts all sounds positive but masks the more deeply rooted inequities that exist on the peninsula and the long term effects on communities. DeBlasio’s affordable housing plan has received major backlash over the past two years as his re-zoning efforts are expediting gentrification in certain neighborhoods. The affordable housing units are in fact more in the middle-class price range and are attracting young transplants and professionals diffusing into the outer parts of the city in search of cheap housing instead of serving extant residents.¹⁵¹ Effects in Far Rockway probably won’t be much different.

¹⁴⁸ Fox-Lent et al., “A matrix approach to community resiliency assessment, an illustrative case at Rockaway Peninsula.”

¹⁴⁹ *Ibid.*

¹⁵⁰ *Ibid.*

¹⁵¹ Zevallos, Pablo. “Opinion: De Blasio’s Housing Plan Is Neither Affordable Nor Fair.” City Limits, April 18, 2019. <https://citylimits.org/2019/04/18/opinion-de-blasios-housing-plan-is-neither-affordable-nor-fair/>.

Re-zoning in the Rockaways may create a lower density environment and allow for the capital improvements needed to make the built environment and infrastructure more resilient in the face of climate change. Regardless, the new plan does not include in-depth background research or substantial reasoning for the zoning changes and how they may impact existing communities. Other than very brief description of building characteristics in each neighborhood there is no description of community, demographics, building uses and occupancy rates. The lack of information fails to address the impacts of re-zoning on property values, construction and occupancy trends that will result. “Today, post-Sandy, the Rockaways’ resilience investments have accelerated the gentrification that had already begun its slow creep into the neighborhood.”¹⁵² These trends are directly linked to the impacts of all the city-led resilience projects on the Rockaways, in particular the re-zoning of Far Rockaway. Storm recovery efforts in the Rockaways are unbalanced, reinforcing that

“The omission of social, political and cultural dynamics is an important shortcoming of much resilience. The question of “ ‘resilience for whom’ ” and “ ‘for whose interests’ ” is rarely addressed. As a result, emphasizing “ ‘climate proofing’ ” and “ ‘win-win’ ” solutions without considering the distributional impacts of such strategies can reinforce short-term solutions and patterns of unsustainable and inequitable development.”¹⁵³

Public marketing of short term recovery plans appear to indicate the path to resilience but, the city’s interventions do not expose the long-term effects on the region’s communities and socio-cultural demographics, only the physical environment.

The sudden burst of interest in the region, led by Mayor DeBlasio, catalyzed several civil projects to enhance the region. The DOT’s Downtown Far Rockaway Urban Design and

¹⁵² Erdos, “Hurricane Sandy and the Inequalities of Resilience in New York.”

¹⁵³ Cited from Cote, Muriel, and Andrea J. Nightingale. “Resilience Thinking Meets Social Theory.” *Progress in Human Geography* 36, no. 4 (February 2011): 475–89. <https://doi.org/10.1177/0309132511425708>.

Streetscape Reconstruction Project,¹⁵⁴ initiated in 2016 aimed to add public plazas, widen sidewalks, elevate street grades, and implement storm sewers all while improving circulation and maintaining all on street parking. Additionally, the plan to increase accessory parking only perpetuates reliance on auto centric travel to and from the peninsula. Instead, the city needs to invest in the long neglected problems with subway service and public access to the Rockaways. Poor maintenance and overdue systems improvements leave the Rockaways, especially far Rockway at a disadvantage. As seen this past summer, power failures due to poor electrical systems led to blackouts and subway failures, leaving hundreds of residents without air conditioning, and hundreds of visitors stranded on hot subway platforms for hours.¹⁵⁵

VIII.4 The Role of the New York City Landmarks Preservation Commission

Recent investment in the Rockaways also catalyzed the designation of two new landmarks. “Both the firehouse at 16-15 Central Avenue and the 101st Precinct Police Station at 16-12 Mott Avenue were landmarked because of their Renaissance and Colonial Revival design.”¹⁵⁶ In respect to the historic built environment in the Rockaways, what role does the New York City Landmarks Preservation Commission (LPC) play in the resilience of the region? Currently, LPC has very little jurisdiction on the peninsula. With only 4 individual landmarks¹⁵⁷, and no historic districts, historic fabric has almost no municipal protection. Known for the

¹⁵⁴ “Downtown Far Rockaway Urban Design & Streetscape Reconstruction Project”, City of New York Department of Transportation, and Department of Design and Construction, 2015.

¹⁵⁵ CBS. “NYC Heat Wave: Thousands Affected By Power Outages Around Queens, Long Island, Other Areas.” CBS New York. CBS New York, July 20, 2019. <https://newyork.cbslocal.com/2019/07/20/nyc-heat-wave-power-outages/>.

¹⁵⁶ Kully, Sadeef Ali. “Rockaway Sees Traffic and Construction Impacts Amid Progress After Rezoning.” City Limits, May 22, 2019. <https://citylimits.org/2019/05/22/rockaway-traffic-construction-housing-rezoning/>.

¹⁵⁷ “Discover New York City Landmarks.” ArcGIS Web Application, n.d. <https://nyc LPC.maps.arcgis.com/apps/webappviewer/index.html?id=93a88691cace4067828b1eede432022b>.

robustness of the agency and strength of their local ordinance, LPC's protection of historic resources is thought to be some of the best in the country. Why are they not taking advantage of the rich history of the Rockaways? What effects would increased designation in the region have on local communities?

An interview with Landmark Preservationist Leanne Pollack shed some insight on an application for the designated firehouse on Mott Avenue (figure 30). She described that the restorative work on the firehouse was primarily for mechanical vents and windows. This building was a bit tricky as it a detached structure with three facades that are clearly visible from the street. For this reason, more care and review were needed to discuss any exterior alterations.¹⁵⁸ However, there was no proposed retrofitting for flooding and storm mitigation. LPC does not require storm prevention for buildings. Instead owners of designated buildings within the city's flood zones are required to comply with the department of buildings, and other city agencies to comply with their storm mitigation standards. To address the issue of climate change, LPC changed their rules for alterations to include flood vents in their revised permit application guide.¹⁵⁹ Buildings that LPC works with to incorporate storm mitigation tools are within a city designated hazard zone.¹⁶⁰

The inclusion of storm mitigation guidelines in the application guide is a step in the right direction. However, without direct enforcement from LPC the agency is relying on owners to take the agency to implement preventative measures on their own. Buildings not required by

¹⁵⁸ Leanne Pollack, "NYC LPC and the Rockaways," telephone interview by author, April 10, 2020.

¹⁵⁹ LPC Permit Guide Book: How to Get Staff Level Approvals, New York City Landmarks Preservation Commission, 2019. <https://www1.nyc.gov/site/lpc/applications/permit-application-guide.page>.

¹⁶⁰ An example of storm mitigation alterations on a landmark designated building is the Terminal Warehouse in west Chelsea, which is a full block structure. Mitigation implemented included: Dry flood proofing where mechanical units are, deploying floor vents around the entire building to let it flood freely, and dry flood proofing on the interior barriers around stairs and elevators.

the city to do so, are more at risk in the case of another extraordinary storm that surpasses the predicted impact areas. In the case of the Rockaways, Leanne noted that the commission was a bit more relaxed and accommodating as the building is publicly owned and has less resources to implement improvements.¹⁶¹ Three of the four designations on the Rockaways are publicly owned, which means they all have limited resources to implement good preservation on top of necessary storm protection. In response, LPC should promote, if not enforce, physical resilience standards for historic buildings to encourage their protection and longevity.

Lack of formal historic designation in the Rockaways provides less protection in the face of the predicted gentrification. Not only are historic structures at risk to future storms, but also to rapid neighborhood change and demolition. An increase in formal designation may protect extant structures and potentially landscapes which will also preserve the socio-spatial developmental history of the peninsula. It will also encourage local leaders, politicians, and policy makers to consider incorporating heritage into future policy and development and protective initiatives. LPC also has the opportunity to survey the region to fully understand the scope of extant historic structures and bring public attention to importance of retaining them.

LPC as an agency is very independent. This independence is a strength for local landmarks commissions but in the case of resilience and climate change the role of LPC as an isolated agency is a disadvantage. An essential component in informing the public of the importance of cultural resources is increased partnership and lines of communication with other civil agencies who play a major role in the development of the urban environment. LPC needs to work more collaboratively with other agencies such as the Planning Department and the Mayor's Office to educate them on the value of cultural resources and encourage them to incorporate their

¹⁶¹ Leanne Pollack, interview.

consideration into planning initiatives. These types of partnerships at the government level are the first step toward implementing effective and inclusive resilience strategies.

IX. CONCLUSIONS

In the Rockaways, recovery policy and planning prioritized economic recovery through physical recovery. As resilience of the physical environment was prioritized, community resilience was compromised. To address this issue increased recognition of the consideration of cultural resources is necessary to achieve an inclusive resilience on the peninsula. Variances in the approaches to recovery policy between the Federal and local governments reinforces the need for increased collaboration in management as a step toward implementing policies that address resilience through a more holistic lens. National Park Service recovery policy and initiatives including the programmatic agreements and RFP specifically address the intersection between historic resources, community needs and economic growth. NYC policies and initiatives focus primarily on economic recovery and the influence of new development and does not include the Landmarks Commission in their planning processes. The lack of inclusive recovery priorities stems from a lack of collaboration at the government level. Combining forces between all agencies in the recovery planning process will allow government bodies with cultural resources at the core of their missions to offer their expertise and ultimately revise or create new policies that take on a more holistic view of recovery and resilience in the urban environment.

In the case of the Rockaways, Hurricane Sandy catalyzed an awareness of the region's vulnerability to climate change and reinforced the importance of the seaside communities to residents and public figures alike. Recent interest in the region and financial investment would

not have been possible without the influx of funding generating through various storm recovery funds and municipal support. The regeneration of the Rockaways is a direct result of Hurricane Sandy and the peninsula is getting the most attention it has seen since the early 20th century.

After Hurricane Sandy, the city left recovery prioritization up to the community based organizations to provide assistance to small businesses and help residents seek necessary aid. These organizations are not robust or well-resourced in the Rockaways, leaving residents disadvantaged during the recovery process compared to other highly impacted areas around the city.¹⁶² Communities with more local organizations and robust local leadership inherently are more resilient when faced with disaster reinforcing Graham et al's argument describing this dynamic in the Rockaways. Lack of community oriented resources in the region emphasizes the need for stronger protection from the government to be fulfilled by the creation of policy that targets all aspects of recovery by region as opposed to creating separation of the built and social environments.

Creating resilience is a form of adaptation, not transformation. In the Rockaways, adaptation policy and intervention instead may result in transformation as the nature of the place will ultimately be altered.¹⁶³ Stronger infrastructure and storm proof retrofits are laying the ground for new development and significance changes to the building culture of the peninsula. Fast tracking new projects through the re-zoning initiative instead of incorporating the use of extant resources will accelerate changes will accelerate transformation, compromising the goal of resilience.

¹⁶² Graham et al, "The Influence of Urban Development."

¹⁶³ Walker, B., Holling, C.S., Carpenter, S.R., Kinzig, A., 2004. Resilience, adaptability and transformability in social-ecological systems. *Ecol. Soc.* 9, 5.

Each policy and initiative took steps toward community resiliency in the Rockaways post-Sandy but research revealed some major downfalls and missed opportunities to engage in a holistic planning process. Historic preservation and cultural resources face roadblocks to being integrated with other climate-change, disaster-response, and urban regeneration policies. Incorporation of cultural resource management into storm recovery forces governments to approach resilience in a manner that responds directly to the adaptation of specific regions. Collaborative approaches to policy creation in the Rockaways will lead to a more resilient urban environment by acknowledging the symbiotic relationship that exists between the extant fabric and communities while still promoting economic growth and adaptability.

X. RECOMMENDATIONS

Based on the analysis above the following recommendations intend to guide policy makers toward a more inclusive planning process. One that incorporates cultural resources into the planning process. The recommendations are ordered in order of priority and are meant to provide the framework for phases of implementation that will ultimately achieve a more holistic approach to resilience in the management of storm recovery in the Rockaways.

Recommendations 1- 5 target the organization of people and collaboration of government bodies needed to form an educated understanding of the impacts of policy on rapid social change in the Rockaways and the role that cultural resources play in that process.

Recommendations 5-7 refer to the survey and treatment of historic fabric on the peninsula in light of the threats of climate change and natural disaster.

1. Create a city-led Cultural Heritage Taskforce in the Rockaways. The task force should draw members from local government, non-profit organizations and community groups as well as local resident leaders. The task force's job will be to educate the public about cultural heritage resources on the peninsula and meet with developers, parks and rec and local officials to help them incorporate both physical and community preservation into their plans for the future of the Rockaways. Additionally, the task will have a development committee dedicated to finding funding and support for heritage related projects and community organizations on the peninsula.
2. Produce a study of long-term effects of current investment and economic recovery initiatives on neighborhood change and population density on the peninsula.
3. Create a cohesive management plan for the entire peninsula. Currently, resilience strategies are being implemented by several agencies without apparent collaboration. Interaction between Parks and Rec, NPS, The Mayor's Office, Community Based Organizations, and the Army Corps is necessary to understand the intricacies of how each policy and intervention interacts with one another and effects the built, natural and social environments. This management plan should include plans to distribute funding, prioritize projects within specific neighborhoods, local tourism control, and preservation and conservation priorities. Additionally, the plan should specifically include short term interventions and explicitly state their impact on long term resilience. Interventions should address climate change, gentrification, economic local business support, public programming, and how to accommodate increasing numbers of visitors in a sustainable way. Representatives from all mentioned groups and any others who may be impacted, including community leaders and residents in order to create and

implement a framework and timeline for the management plan. The management plan should also incorporate a reaction and migration plan in the case of another catastrophic event that may displace current residents. Some suggestions for emergency strategies include providing residents with guides on how to prepare their homes for future climate events, how to create a transportation plan for emergency evacuation, and begin the creation of emergency funds for vulnerable communities.

4. Revise the co-management agreement between NPS and NYC to provide more funding for programming in Gateway. Along with the revision, funding from the city should be allocated to supply the Park Service with more staff and give them agency to design some of the programming themselves. Use this agreement as a model for future partnerships where the stewardship of a historic resource can be mutually beneficial for the economy and local community needs.
5. Incorporate the consideration of cultural heritage into resilience policy and initiatives. Section 106 inherently mandates a conversation about adverse impacts on cultural heritage. With hardly any national register designations on the peninsula its jurisdiction is incredibly limited. Therefore, cultural heritage must be integrated into new development policies and be at the forefront of initiatives tackled by Community Based Organizations.
6. Initiate a city led survey of the fabric on the Rockaway Peninsula. This survey should include construction dates, architectural styles, building materials, current condition, occupancy, and extent of effect (if any) from Hurricane Sandy or any other climate related event. Documentation of extant fabric can be used as data to support the narrative of development in the region and be used as a base to prioritize preservation,

conservation, mitigation and intervention. The second part of the documentation process should incorporate the collection of personal narratives from long standing Rockaway residents. Through folklore, photographs, videos or objects, people can tell the unseen histories of the region, further reinforcing the heritage of the region. Additionally, much of the research may have been completed by local community organizations, or institutions within the city. The idea is to create a cohesive collection for all of this data both for the physical and social environments to inform future decisions relating to development and storm recovery decisions that will impact extant community members.

7. More formal historical designation. With extremely limited historic designations on both the national and local level, historic fabric in the Rockaways is not only at risk to future climate related events, but also to the rapid neighborhood change catalyzed by increased visitation and re-zoning. Outside of Gateway, there are nine protected buildings and one, three block district under national and local preservation policy. Increasing designation, particularly local designation may prevent demolition, out-of-context development, and destructive alterations. Increased national register designations will qualify more fabric for the section 106 review process which is imperative at this time when the government is pouring money into capital projects on the peninsula. Protection provided by section 106 will insure that impacts on heritage both direct, indirect and environmental, will be incorporated into the decision making process for new construction and revising infrastructure.

8. Create a set of climate mitigation design guidelines. This can be led by the Landmarks Preservation Commission with collaboration from the Department of Buildings and the Department of Environmental Protection.

Figures

New York City

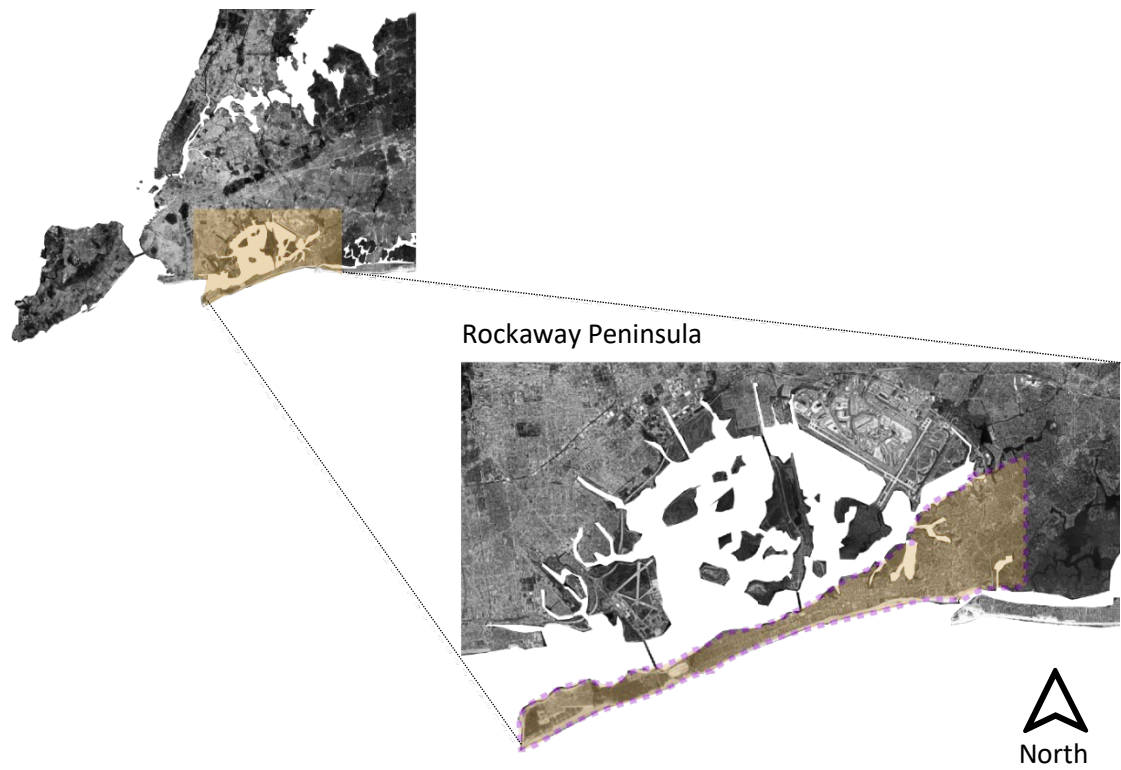


Figure 1, Rockaway Peninsula Locator Map, Graphic by Kathie Brill, 2019.

Government Jurisdiction on the Rockaway Peninsula, Queens, New York City

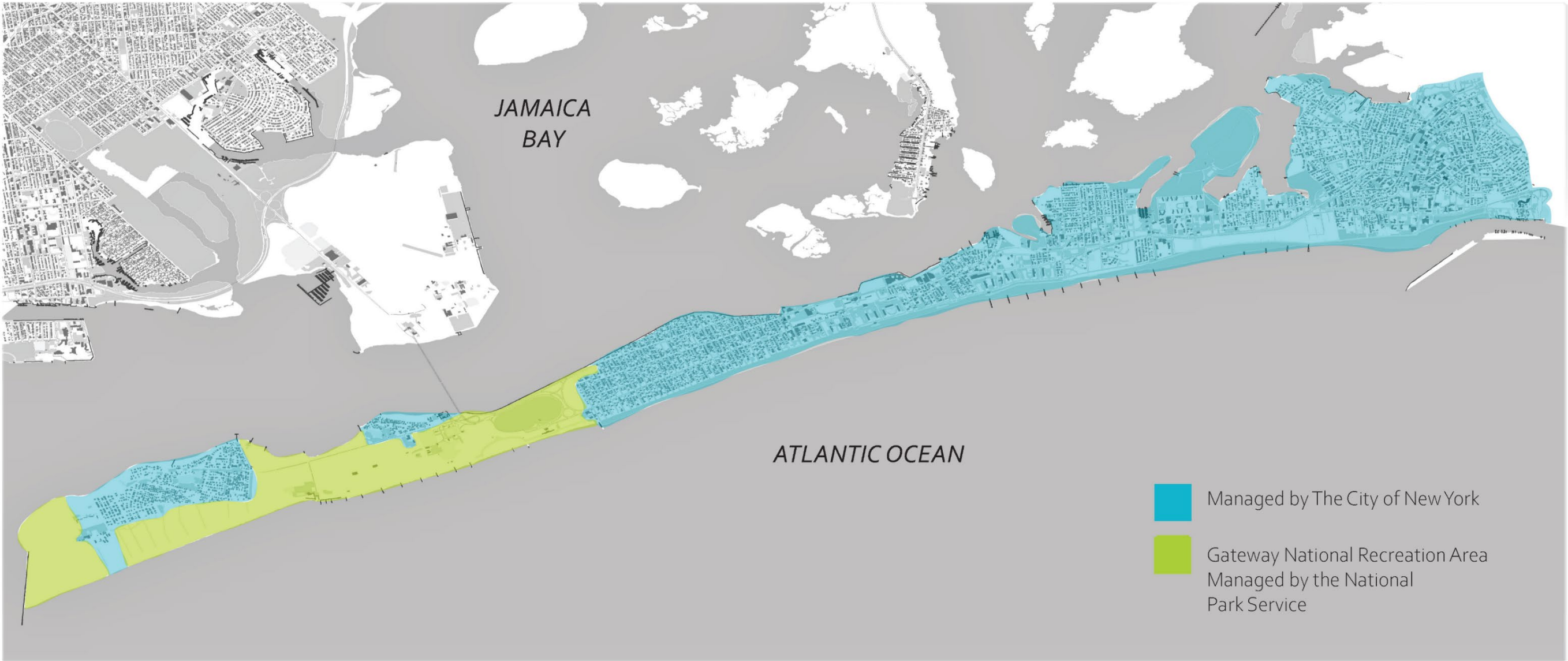


Figure 2, Government Jurisdiction on the Rockaway Peninsula, Queens, New York City. This map shows the land area under the respective jurisdiction of the National Park Service and the City of New York. Graphic by Kathie Brill, 2020.

Neighborhoods of the Rockaways



Figure 3, Neighborhoods of the Rockaways, neighborhood divisions on the Rockaway Peninsula. Graphic by Kathie Brill, 2020.

Landmark Designation on the Rockaway Peninsula, Queens, New York City

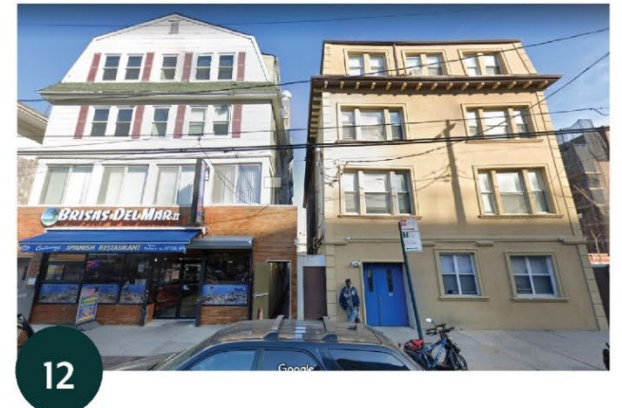
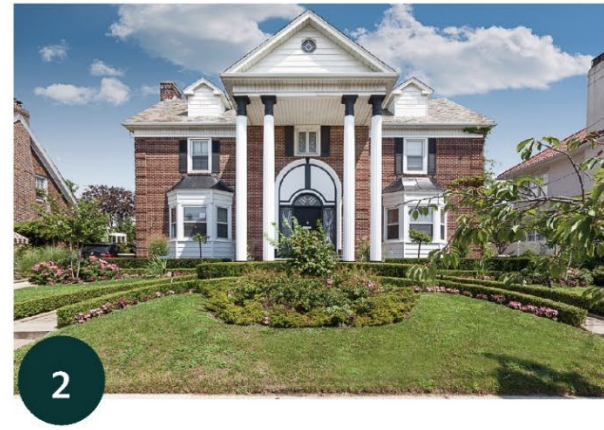
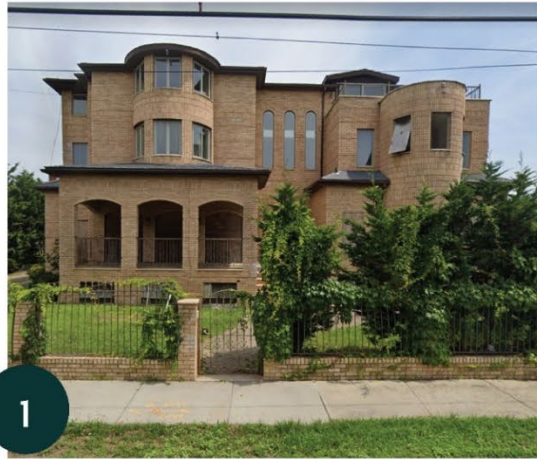


Figure 4, Landmark Designation on the Rockaway Peninsula, Queens, New York City, Spatial diagram of nationally and locally designated landmarks. Graphic by Kathie Brill, 2020

Architectural Character of The Rockaways



Figure 5, *Architectural Character of the Rockaways*, a panorama of the architectural styles and conditions across the Rockaway Peninsula. Graphic by Kathie Brill, 2020.





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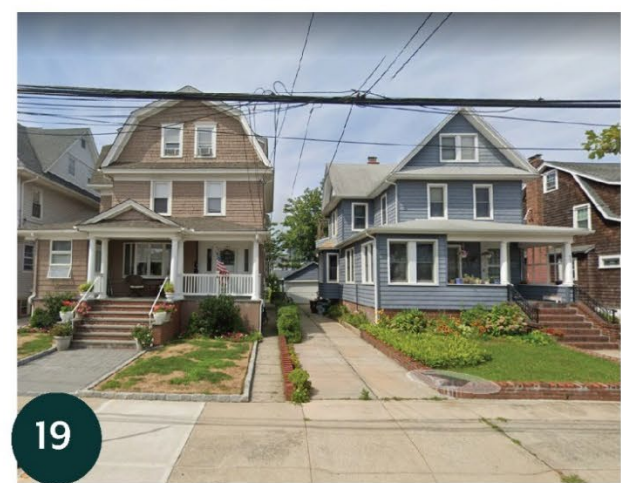
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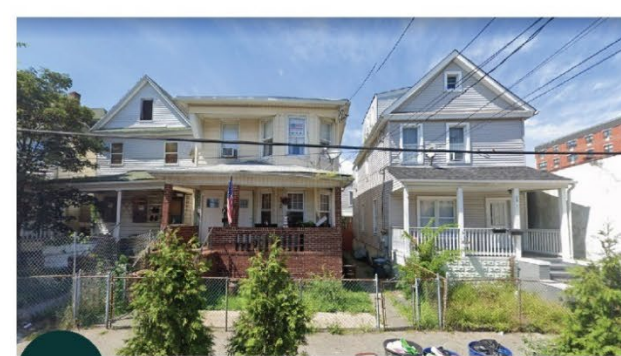
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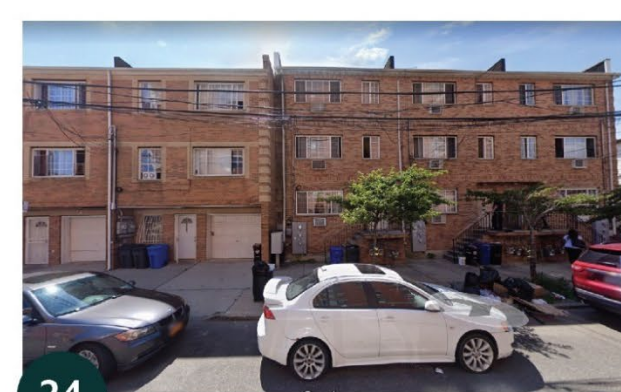
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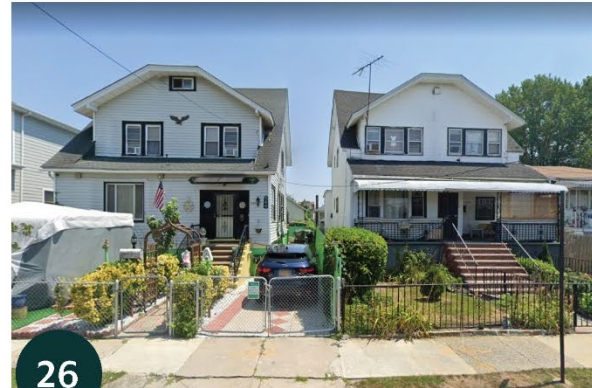
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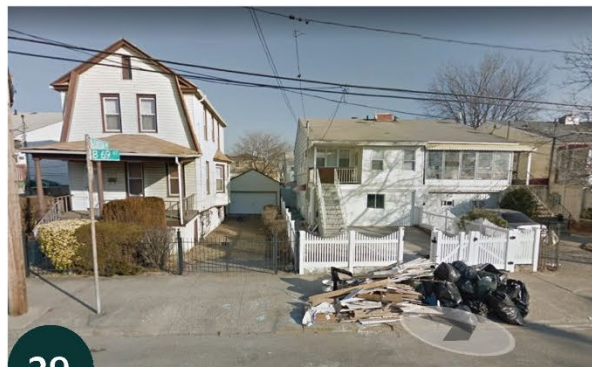
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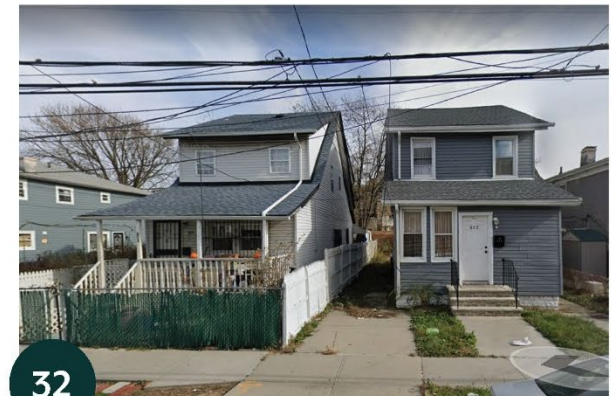
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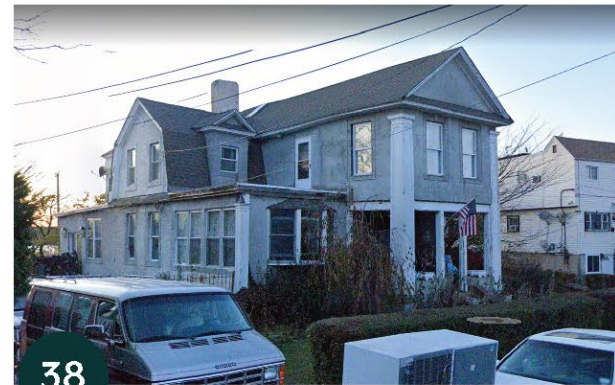
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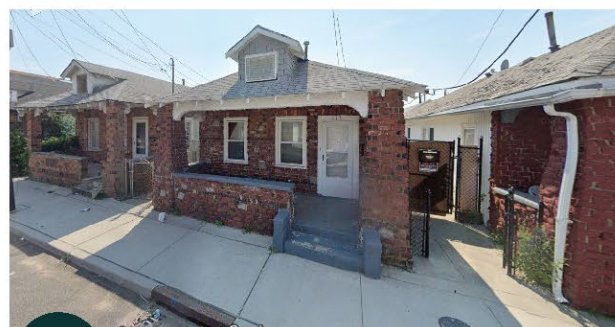
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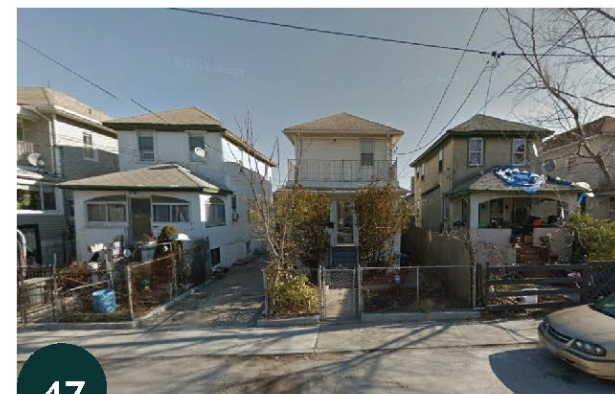
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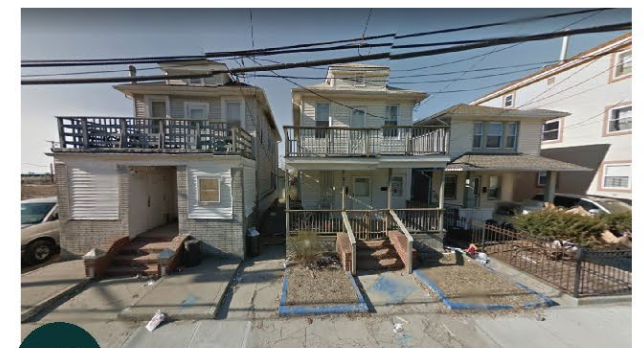
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Timeline of Events, Initiatives and Interventions in the Rockaways:
1970 until Present

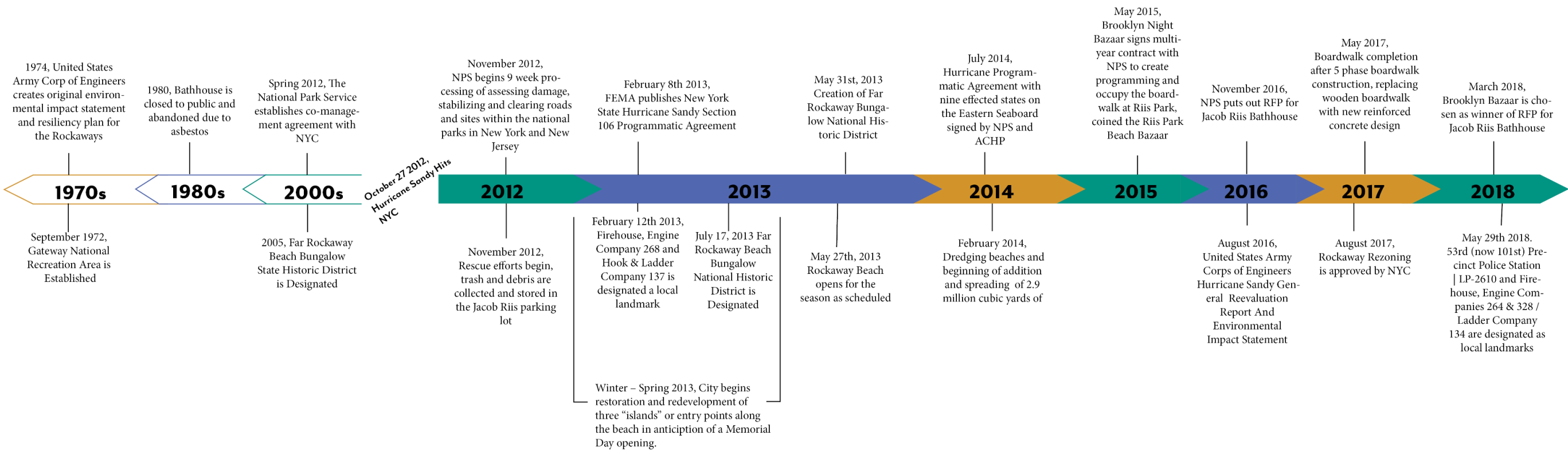


Figure 6, Timeline of Events, Initiative and Interventions in the Rockaways: 1970 until Present. The timeline depicts important events and policy implementations related to Hurricane Sandy and the effects on Resilience in the Rockaways. Graphic by Kathie Brill.



Figure 7, A Colony of Historic Rockaway Bungalows, , early 20th century, Source: The Wave, <https://www.rockawave.com/articles/the-bungalows-of-rockaway-goes-international/>

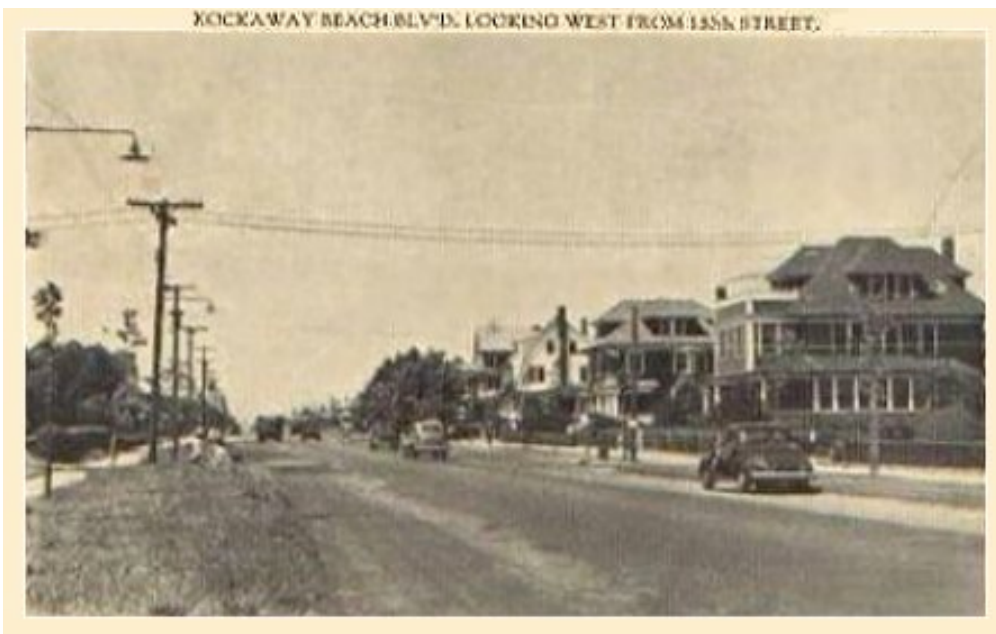


Figure 8, Rockaway Beach & Rockaway Park circa 1940. Source: Far Rockaway Photos, http://www.farrockaway.com/carol/morpRockawayBeach_RockawayPark1.html



Figure 9, Rockaway Boardwalk and Beach circa 1939. Source: *Historic The Wave*, *Historic Views of the Rockaways*, <https://www.rockawave.com/articles/historical-views-of-the-rockaways-31/>

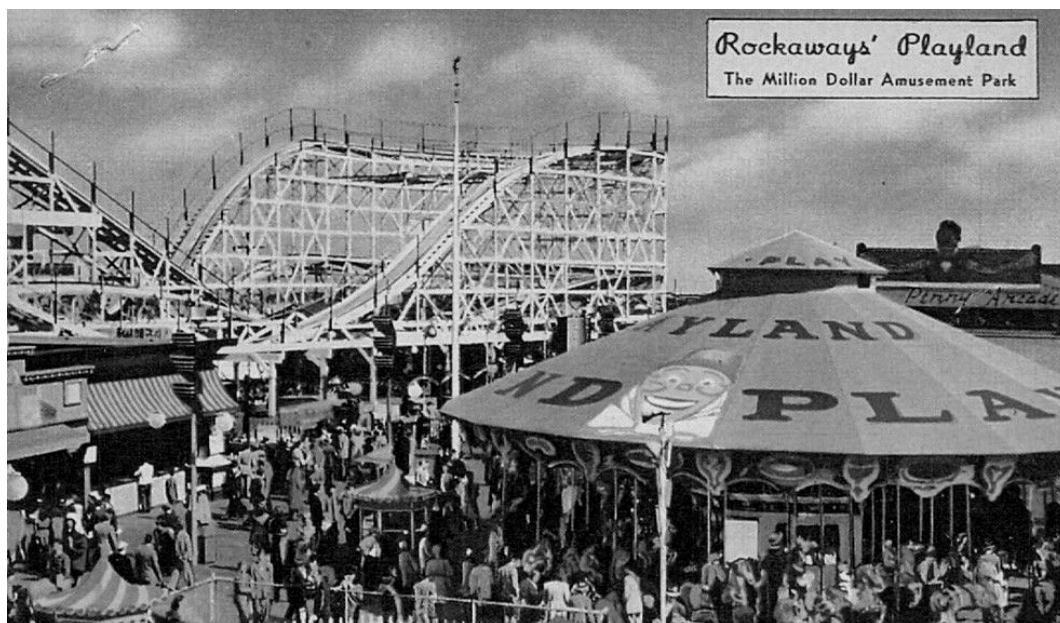


Figure 10, Rockaway Playland, an amusement park on Beach 98th Street built in the 1920's. The park was razed in the 1980s to make way for new development. Source: *The Wave*, <https://www.rockawave.com/articles/historical-views-of-the-rockaways-161/>



Figure 11, Ocean Bay Apartments public housing in Arverne Rockaway. Source: <https://www.globest.com/2019/06/14/nycha-housing-ocean-bay-apartments-completes-major-rehab/?slreturn=20200330201152>



Figure 12, Rockaway beach circa 2018. The beach is making a major comeback as hundreds of thousands of people flock the shore each summer. <https://ny.curbed.com/2019/5/14/18623580/nyc-rockaway-beach-fully-reopen-for-summer-season>



Figure 13, Destruction in the Rockaways after Hurricane Sandy, Source: The New York Times, Foderaro, Lisa W. "Racing the Clock in the Rockaways." The New York Times. The New York Times, May 18, 2013.



Figure 14, Rockaway Boardwalk Damage after Hurricane Sandy, Source: Curbed NY Foderaro, Lisa W. "Racing the Clock in the Rockaways." The New York Times. The New York Times, May 18, 2013.



Figure 15, Destruction in the Rockaways after Hurricane Sandy, Source: *The Nation*, <https://www.thenation.com/article/archive/3-years-after-hurricane-sandy-is-new-york-prepared-for-the-next-great-storm/>



Figure 16, Rockaway Boardwalk damage after Hurricane Sandy, Source: *The New York Times*.



Figure 17, Property Damage on the Rockaway Peninsula after Hurricane Sandy, Source: National Geographic, 2012.

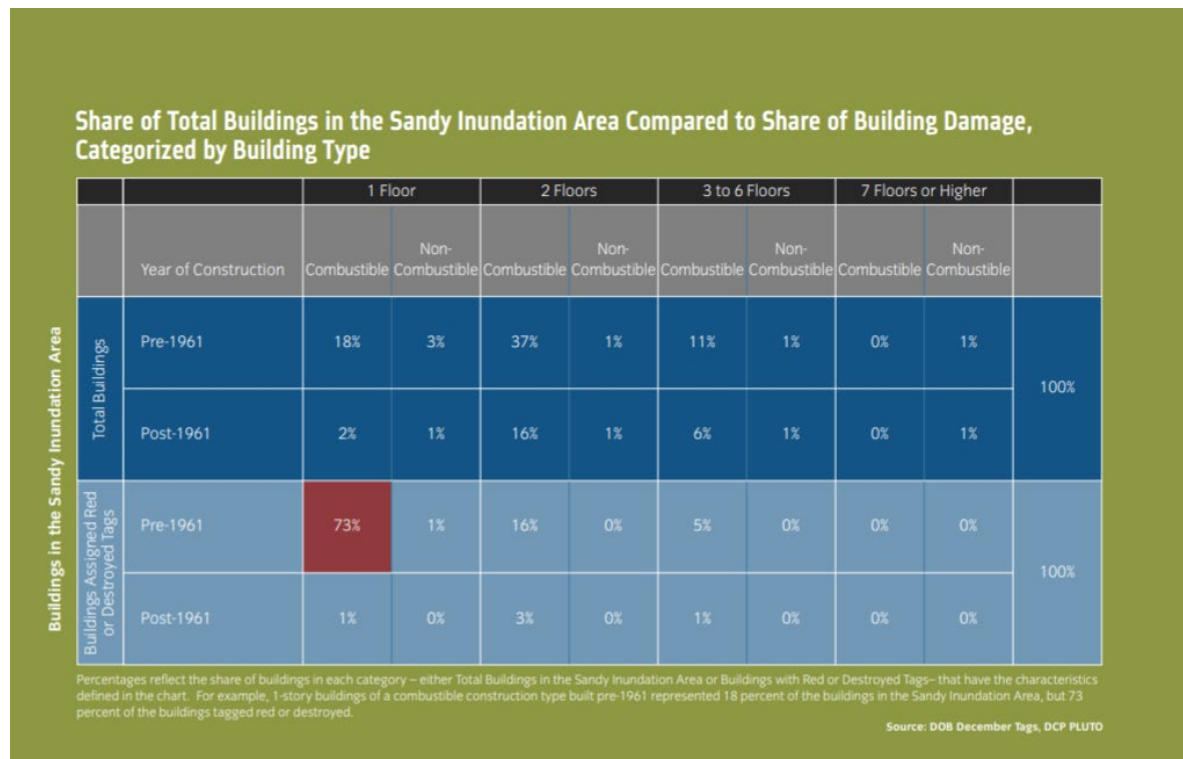


Figure 18, New York City Department of Buildings Building Survey Data for South Queens, Source: "A Stronger More Resilient New York" SIRR Report, 2013

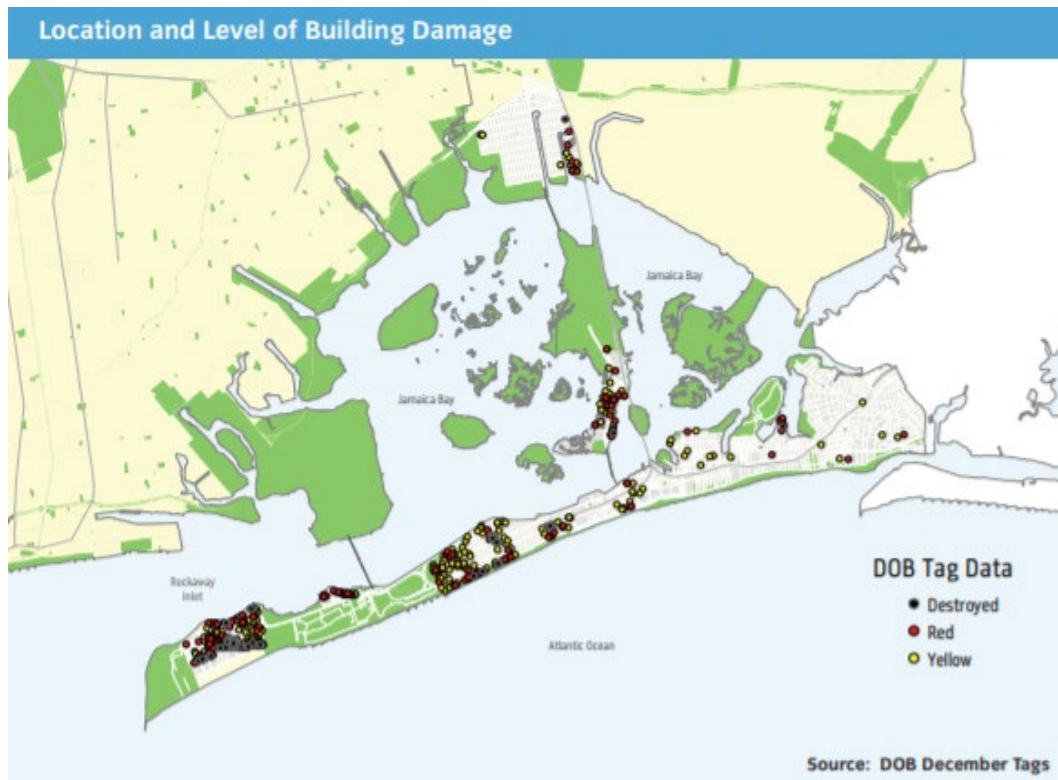


Figure 19, DOB Building Condition Tags in South Queens after Hurricane Sandy, Source: A Stroger More Resilient New York, SIRR, 2013.

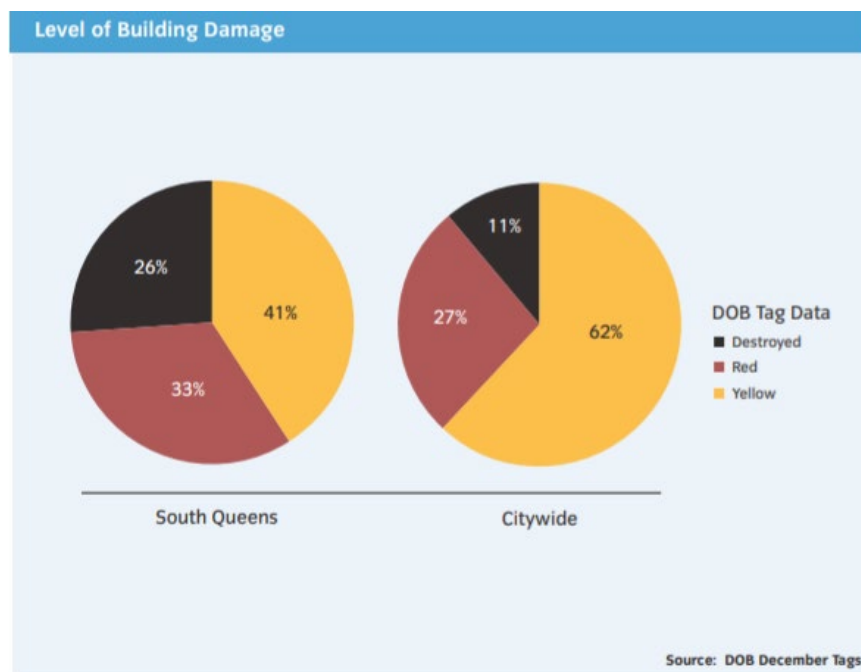


Figure 20, Condition breakdown in South Queens in comparison to all of New York City. Source: A Stroger More Resilient New York, SIRR, 2013.



Figure 21, Jacob Riis Bathhouse, Photo by Kathie Brill, 2019



Figure 22, Historic Photo of Jacob Riis Bathhouse in 1969. Source: Riis park historic <https://qvshp.org/blog/2018/05/08/beyond-the-village-and-back-jacob-riis-parks-art-deco-bathhouse/>, William E Sauro 1969.



Figure 23, Riis Park Parking Lot served as a collection area for all of the hurricane debris from the entire peninsula. Source: LA Times, <https://www.latimes.com/nation/la-na-then-and-now-super-storm-sandy-slider-htmlstory.html>



Figure 24, Jacob Riis Bathhouse Restoration and Improvements on the Northwest Facade. Photo by Glenn Brill, 2020.



Figure 25, Jacob Riis Bathhouse Restoration and Improvements on the eastern tower. Photo by Glenn Brill, 2020.



Figure 26, Jacob Riis Bathhouse Restoration and Improvements on the southern facade and 1930's moderne addition. Photo by Glenn Brill, 2020.



Figure 27, Riis Park Handball Courts. certain parts of the park are still in poor condition. This image exemplifies that there are certain priorities for funding, such as the bathhouse while other areas are still in need of improvement. Photo by Glenn Brill, 2020



Figure 28, Rockaway Beach Completed Boardwalk, 2019. Source: <https://informedinfrastructure.com/27931/ch2m-designed-rockaway-boardwalk-reconstruction-honored-with-waterfront-center-award/>



Figure 29, Renderings for New Development in Far Rockaway resulting from rezoning initiatives. Source: The Real Deal, 2017.



Figure 30, 101st Police Precinct 12-16 Mott Ave, Queens, New York is a locally designated Landmark. Source New York City Landmarks Preservation Commission.

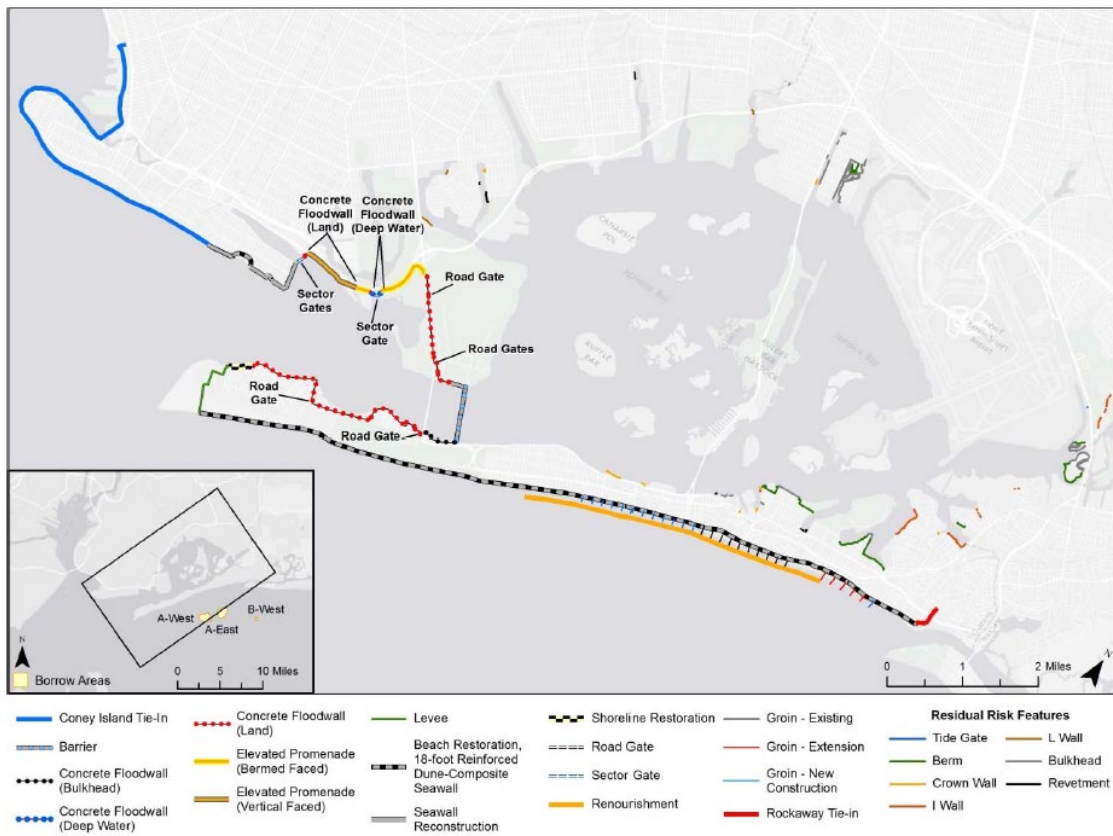


Figure 31, Tentative USACE plan for storm mitigation surrounding the Rockaway Peninsula, Source: Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay: Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement, 2016.

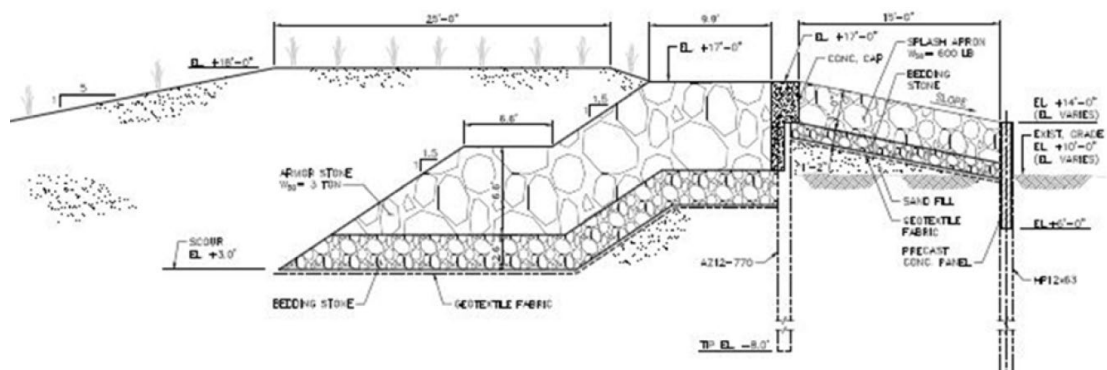


Figure 5-7: Atlantic Shorefront Composite Seawall Beach 126th St. to Beach 149th St.

Figure 32, Section Plan for Seawall Construction on the Atlantic Shoreline of the Rockaway Peninsula, Source: Atlantic Coast of New York, East Rockaway Inlet to Rockaway Inlet and Jamaica Bay: Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement, 2016.

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INDEX

A

Adaptation: 5, 12, 18, 19, 22-23, 63-64

Architectural Character: 13, 73

B

Boardwalk: 14-15, 49-53

Bungalows: 9-12, 79

C

Capital Improvements: 54, 58

Climate Change: 2-5, 15-25, 47, 51, 60-64

Community Resilience: 2-6, 17-20, 34, 38, 47, 53, 56, 62

Cooperative Management Agreement: 28

Cultural Resources: 2-6, 12, 17, 28-31, 38-42, 51, 61-62, 64

D

Deferred Maintenance: 28

Disinvestment: 3, 10, 14, 19, 21, 39

E

Economic Recovery: 1, 4, 6, 42, 48, 62, 65

F

Far Rockaway: 11-12, 45, 48, 53-55, 58, 90

Floodplain: 16, 41

G

Gateway National Recreation Area: 2, 14, 26-28, 33

Groins: 51

H

Hurricane Sandy: 12, 14-18

I

Inclusive Planning: 20, 64

J

Jacob Riis Park: 26-28

Jacob Riis Bathhouse: 4, 33, 39, 86-89

Jamaica Bay: 14, 26-27, 40, 54, 92

L

Local Historic Designation: 31, 67, 72

M

Mitigation: 16, 39-41, 46, 60, 67-68

N

National Park Service: 1, 4, 5, 13, 25-36, 62, 70

National Register of Historic Places: 11, 30-32, 66

New York City Department of Buildings: 15, 43, 60, 68

New York City Department of Parks and Recreation: 6, 26-28, 42, 49-51, 65

New York City Landmarks Preservation Commission: 26, 43, 59, 68

O

Ocean Bay Apartments: 10, 81

P

Programmatic Agreement: 4, 30-32, 38, 62, 99

R

Resilience: 1-2

Rockaways: 6

Request for Proposal – Jacob Riis

Bathhouse: 4, 36, 38, 62

S

Sand Replenishment: 40, 46

Seawall: 41, 93

Section 106, NHPA of 1966: 30-32, 38, 66-67

Special Initiative for Rebuilding and Resilience (SIRR): 4, 43-46, 52, 84-85

U

United States Army Corps of Engineers: 4, 6, 39-42

Urban Renewal: 10, 14, 48

Z

Zoning: 4, 10-11, 19, 41-46, 53-60, 67, 90